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JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL,

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VOL. XV.

"It will flourish, if naturalists, chemists, antiquaries, philologers, and men of science, in different parts of Asia will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish if such communications shall be long intermitted; and it will die away if they shall entirely cease."—Sir Wm. Jones.

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JOURNAL

OF THE

ASIATIC SOCIETY.

On the Coins of the Independent Muhammadan Sovereigns of Bengal.

By J. W. Laidlay, Esq., *Co-Secretary Asiatic Society.*

Some months ago, as most of the readers of this Journal are perhaps aware, the greater part of the collection of ancient coins belonging to the Asiatic Society was abstracted from the Museum, and along with these, a valuable gold medal, the gift of the present Emperor of Russia. About the time when this unfortunate event occurred, I was engaged in arranging a series of the coins of the independent Muhammadan sovereigns of Bengal, and had reason to believe, that with the assistance of the Society's cabinet, which contained many rare and unique specimens of that type, I should succeed in filling the gaps in my own collection, and render the series tolerably complete. As misfortunes, however, rarely happen singly, it occurred that just about the same time, my own little cabinet sustained a similar loss. At a moment of neglect,—for we have in general but our own negligence to blame for mishaps of this nature,—nearly the whole of my gold and silver coins, including many uniques, and almost all of the series now under consideration, a series which had employed many years and much labour to collect, were purloined from my cabinet, those of copper only being spared to me, as being of too little intrinsic value to be worth the labour of removal.

The coins which record the names of the obscure Muhammadan dynasties of Bengal have, it must be confessed, nothing in common with the high interest attached to the relics of ancient India and Bactria, which bring us in contact with times and persons of classical renown; or illustrate those dark but profoundly interesting periods in the world's history, upon which the light of tradition falls but dimly. Yet, even independently of their more important use in correcting or in confirming the narrative of the historian, they have an interest of their own in their very rarity, which is such, that it is far easier to procure the coins of Alexander or his successors, than those of the Sultans of Bengal, of whom indeed few other monuments, and scarcely even these, remain. Of Gour, or Laknauti, the once vast and magnificent seat of their government, the capital whose wealth and splendour claimed for it the title of the 'seat of paradise,' scarce a vestige is to be seen: over its entire site, once instinct with thronging multitudes, nature has resumed her quiet sway, and the last traces of the mighty city are fast disappearing under the peaceful labours of the husbandman.

It is with the view of preserving a few authentic memorials of a dynasty of kings, of whose history so little is known, that I venture to submit a séries of such coins as escaped the disasters above alluded to, or were happily figured before them. Some of these are in less perfect preservation than is desirable; but let us hope, that such collectors as may be in possession of better specimens, will be induced to supply impressions of them, by means of which, these defects may be remedied on some future occasion.

The first of the Muhammadan rulers of Bengal who attained any thing approaching to real independence was Iliyas Shah, who successfully resisted the arms of Feroz Shah, and concluded a treaty of peace with that Emperor at Akdala, A. H. 757. He caused the coin of his kingdom to be struck in his own name, the least equivocal sign of independent sovereignty, without experiencing that immediate interference on the part of the Emperor of Delhi which attended all similar manifestations of his predecessors. In this respect, as well as in the permanence of his dynasty, Iliyas Shah must be regarded as the first independent Sultan of Bengal; for his predecessor Fakhar ud-din, who is generally considered so by native historians, had scarcely thrown off his allegiance to Delhi, when his unstable authority was subverted by Ali Mobarik, an

officer acknowledging the supremacy of the emperor, who put him to death and himself assumed the emblems of independence. His reign, however, if a short usurpation may be so designated, was soon terminated by Iliyas Shah, who assassinated Fakhar ud-din, and took possession of the kingdom, which he governed with vigour for sixteen years, and transmitted to his descendants. The coins Nos. 1 and 2 were struck by this prince; they bear no date, and their execution is sufficiently rude—

OBVERSE.

السلطان العادل شمس الدنيا والدين ابو المظفر الياس شاه السلطان

REVERSE.

سكندر الثاني يمين الخلافة امير المومنين

He* died in A. H. 760, and was succeeded by his son Sekandar Shah.

This prince reigned, according to Ferishteh, for nine years and some months, maintaining by the prudent adoption of his father's policy, the independence and integrity of his kingdom, when the utmost efforts of Feroz Shah were once more put forth to reduce him to a state of vassalage. No. 3, is a coin of Sekandar. It is in good preservation, and was procured at Santipore, near Culna. It records the titles and paternity of this prince, but no date—

OBVERSE.

الواثق بتاييد الرحمن ابوالمجاهد سكندر شاه ابن الياس شاه السلطان

REVERSE.

يمين الخلافة الله ناصر امير المومنين عون الاسلام والمسلمين خلد الله ملكه

The inscription on the margin is not legible. Sekandar Shah died, or according to some, was killed in an engagement with his son and successor Gheias ud-din, in A. H. 769.

Nos. 4 and 5, are coins of the last named Sultan. As usual with the coinage of that period, they bear no date—

* Before ascending the throne he was known as Haji Iliyas; he is said to have founded the town of Hajypore.

OBVERSE.

غیاث الدنیا والدین ابولمظفر اعظم شاه ابن سکندر شاه ابن الیاس شاه السلطان

REVERSE.

ناصر امیر المومنین عون الاسلام والمسلمین خلد ملکه

Gheias ud-din seems to have been a gay and accomplished prince. He was in correspondence with the poet Hafiz, who addressed an ode to him. He died according to Ferishteh A. H. 775, having reigned six years and some months.

His son Seif ud-din succeeded on the throne with the pompous title of Sultan Assulatin. I have not been fortunate enough to procure any coins of this monarch, but copy that figured No. 6, from Marsden's '*Numismata Orientalia*'—

OBVERSE.

سیف الدنیا والدین ابولمجاهد * * * شاه ابن اعظم شاه ابن سکندر شاه ابن الیاس شاه السلطان

REVERSE.

ناصر امیر المومنین عون الاسلام والمسلمین

Historians ascribe to him a reign of ten years. He died in A. H. 785, and was succeeded by his son Shams ud-din Sani, the last of a dynasty unusually long in those times. The author of the Tabqât-i-Akbari, Nizam ud-din Ahmed, ascribes a short but prosperous reign to this prince; but Ferishteh describes him as young and inexperienced; from which we may infer, that he was most probably assassinated by his successor, a powerful Hindu nobleman, named Raja Kanis, (Ganesa?) No coins have been found of Shams ud-din Sani, who died in 787.

As Raja Kanis never openly embraced the Muhammadan faith, it is most probable that he never issued the coin of the realm in his own name. To have omitted the usual symbols of Muhammadanism would have been a perilous experiment on the forbearance of the bigoted followers of the prophet, and to insert them would have compromised the Raja with the adherents of his own faith. Either alternative was, perhaps, avoided by the issue of no new currency during his reign,

which lasted seven years. He died in A. H. 794, and was succeeded by his son Junmul, or Cheitmal. This prince avoided the perplexities of his father's anomalous position by summoning the nobles on the death of Raja Kanis, and publicly professing his conversion to Islam, which he artfully insinuated had taken place in his early youth, but had remained unavowed in deference to his father. He assumed with the emblems of sovereignty, the title of Jellal ud-din Muhammad Shah. There are, I believe, many of his coins bearing dates, according to Marsden, from 819 to 823, although the commencement of his reign is fixed by historians in 795 and its termination in 812. The specimens Nos. 7, 8, and 9, are very much defaced, and bear no date. The first two are taken from impressions presented to me by the late James Prinsep. The inscription upon the obverse seems the same in all—

جلال الدنيا والدين ابوالمظفر محمد شاه السلطان

and on the reverse in Nos. 7 and 9 ناصر امير &c. In No. 8, apparently the Kalmeh. This prince took much pains to improve and adorn the city of Gour, and there may be still some few remains of public buildings erected at his expence.

No. 10, is a coin of his son and successor, Ahmed Shah, who died according to Ferishteh and Nizam ud-din, in A. H. 830; but this coin does him the good service of prolonging his life to 836, which date it bears. His reign, however, must as to its earlier part be curtailed by the evidence of the dates on those of Jellal ud-din—

Obverse.

السلطان * * * شمس الدنيا والدين ابو المجاهد

احمد شاه ابن محمد شاه السلطان

On the reverse, the Kalmeh and date :—٨٣٦

After an interregnum of a few days, during which, a slave of the royal household having usurped the throne, caused the sons of Ahmed Shah to be murdered, and was afterwards destroyed himself. Nasir Shah, a remote descendant of Iliyas Shah, the first of our series, was summoned by the nobles from the plough, to which the adverse circumstances of his family had driven him, to sit on the throne of his ancestors. Being

unable to record a royal paternity on his coinage, he seems to have contented himself with the simple repetition of his name and title—سلطان ناصر شاه in seven little circlets, occupying the obverse of his coin No. 11. The reverse is illegible. I have met with no other coin of this prince.

The next king of Bengal recorded by historians is Barbek Shah, whom they designate the son of Nasir Shah. But there is reason to reject this affiliation as incorrect; for Barbek Shah describes himself on his coinage as the son of Mahmud Shah, as does also Yusuf, the son of Barbek, as will be seen. The same Mahmud is also recorded on a subsequent coin of Fatteh Shah. But historians make no mention of such a prince. Can it be that his reign has been entirely overlooked by history? or did Nasir Shah, at any period of his life subsequent to ascending the throne, change his name for that of Mahmud? There are great difficulties in either view of the matter, but it does not seem a very bold conjecture, considering the imperfect history of those times, that Mahmud Shah may have been omitted in the roll of princes that has reached us.* The remarkably long reign ascribed to Nasir Shah seems to afford room enough for the interpolation of another king; but on either supposition, I incline to ascribe to the father of Barbek Shah the coin No. 12; for an impression of which, I was indebted to the kindness of the late James Prinsep. The cufic characters on the reverse are not usual upon the Bengal coinage; but the small circlets, with the monarch's name on the obverse, seem to establish a relationship between this coin and the preceding one of Nasir Shah. The only words legible on the obverse are—

محمود شاه سلطان

On the reverse, the Kalmeh.

Of the coins of Barbek Shah, I have met with none; but to render as complete as possible the present series, I borrow that figured in plate No. 13, from Marsden's work—

* That there is nothing very extravagant in this conjecture may be inferred from the circumstance of the omission of one entire reign (that of the last Mahmud) by Ferishteh. The reign of Yusuf Shah is in like manner omitted in the Tabqât-i-Akbari; but this may possibly be the fault of the transcriber who made the copy in the Society's Library. Since the above was printed, I have met with a coin of Mahmud, which bears a strong family likeness to those of Fatteh Shah in the Plate.

Obverse.

السلطان الاعظم باربک شاه السلطان ابن محمود شاه السلطان

Reverse.

The Kalmeh and date 873.

The next, No. 14, is a coin of his son and successor Yusuf Shah. For this handsome specimen I am indebted to the kindness of my friend Mr. Maseyk of Junghipore, whose skill in the acquisition of these relics is unrivalled. This coin confirms the affiliation of Barbek Shah, and leaves no room to doubt that a prince named Mahmud Shah sat on the throne of Bengal; but whether identical or not with Nasir Shah, we have at present no monuments to determine. It is most singular, however, that no mention should be made of this name in the history of the times—

Obverse.

شمس الدنیا والدین ابوالمظفر یوسف شاه سلطان ابن باربک شاه سلطان ابن محمود شاه سلطان

Reverse.

The Kalmeh and date—۸۸۴ خزانه

After the death of Yusuf Shah, a youth of the royal family was raised to the throne, with the title of Sekander Shah, but was, after a few weeks, deposed for incapacity, and was succeeded by his uncle Fatteh Shah. Historians do not mention the genealogy of this king; but his coins, Nos. 15 and 16, which are, as far as I am aware, unique, make him the son of Mahmud Shah, and consequently the brother of Barbek Shah. The inscription on these coins runs from reverse to obverse—

السلطان ابن السلطان حلال‌الدنیا والدین ابوالمظفر فتحشاه ابن محمود شاه السلطان فتحاباد ۲ * * *

Fatteh Shah was killed according to Ferishteh, in A. H. 896, by Barbek, a eunuch, who usurped the throne under the title of Sultan

Shahzada, and reigned about eight months. He was, in his turn, assassinated by an Abyssinian, named Mulk Andiel, who setting aside the legitimate heir, a son of Fatteh Shah, assumed the royal authority with the title of Feroz Shah. We must not be surprised if there remain but few coins or other monuments of those barbarous and unsettled times, when, as the Persian historian naively remarks, "to have killed the murderer of the king was deemed in Bengal a sufficient title to the vacant throne."* Of Sultan Shahzada there are no coins extant: perhaps none were ever struck; but Marsden has preserved one of Feroz Shah, of which, to continue the series, I here give a copy—

Obverse.

تاج‌الدنیا والدین فیروز شاه السلطان

Reverse.

السلطان العهد والزمان * * * *

Date on the margin of the obverse—۸۹۷, 897.

At the death of Feroz Shah, he was succeeded on the throne by Mahmud Shah, stated by Ferishteh to have been his son. Of this prince I have met with no coins; at least with none that can be, with certainty, ascribed to him. His reign was a very short one, and specimens of his coinage are not likely therefore to be numerous. Amongst the coins figured by Marsden, as those of the Patan dynasty of Hindoostan, is one of Mahmood Shah, so palpably that of a Bengal king, that it is difficult to imagine how it could be ascribed to any other. There is no date upon it to enable us to fix it with certainty upon the son of Feroz Shah; but the execution of the coin and the locale of coinage, فتحاباد of which several letters are legible, leave no doubt of the class to which it belongs: and as there is no other Mahmud with whom he can be confounded, unless it be the apocryphal father of Barbek (for the coins of Mahmud, the son of Husein, are very distinct from this), I have little doubt that this is the appropriate place for it—

* سالی چند این رسم بنگاله بود که هرکه کشندهٔ حاکم خود را بکشد و آنقدر فرصت یابد که بجای او بر تخت نشیند *Feristeh.*

No. 18. Obverse.

السلطان العادل ناصر الدنيا والدين ابوالمجاهد محمود شاه السلطان

Reverse.

الموید بتاید الرحمن فتحاباد

The reign of Mahmud Shah was a short one. In A. H. 900, he was murdered by Seddee Badr Dewaneh, who ascended the throne with the title of Mozaffer Shah. No. 19 is a coin of this execrable prince, which Marsden has erroneously ascribed, as the foregoing, to the Patan sovereigns of Hindoostan. In execution and other respects, it is so perfectly coincident with other Bengal coins, that there need be no hesitation in appropriating it to the present king, the only one of the name among those of Bengal—

Obverse.

شمس الدنیا والدین ابوالمظفر مظفر شاه السلطان خلد الله ملکه فتحاباد

Reverse.

The Kalmeh.

Mozaffer Shah reigned about three years, during which he rendered himself hateful to his subjects by his many atrocities. He suffered in turn the same fate which he had inflicted on his predecessor; and Ala ud-din Husein Shah, a nobleman of distinguished but not royal rank, ascended the throne by the usual path of blood. This prince enjoyed a degree of authority and safety, which had not fallen to the lot of any of his recent predecessors. Of his coins numerous specimens are extant, bearing testimony by their number and variety, to his peaceful and prosperous government. Nos. 20 and 21, are two out of many that have passed through my hands. The inscription continues from the reverse to the obverse—

السلطان العادل علاالدنیا والدین ابوالمظفر حسین شاه السلطان ابن سید اشراف حسینی خلد ملکه * * * ۱۲ * * *

Husein Shah reigned twenty-four years, and notwithstanding some unjustifiable proceedings in the early part of his career, was deservedly beloved by his subjects, and respected by surrounding governments. The emperor Sekandar, who had subdued the province of Behar, marched against Husein Shah; but found it convenient to arrange a treaty of peace with so vigorous a prince, and withdraw towards Delhi, ere the commission of aggression on either side rendered a friendly adjustment impracticable. Ala ud-din died in 927 at Gour, where his tomb still exists. Many monuments of this reign are scattered over the country.

Husein Shah was succeeded by his son Nasrat Shah, or, as he is improperly styled by historians, Nasib Shah. From the accession of this prince may be dated the decline of the independent kingdom of Bengal. The chronology of his reign is involved in much perplexity, which unfortunately the dates upon the coinage of the times, do not assist in unravelling. Historians seem to have fused the events of two reigns, those of Nasrat Shah and his successor, into one; and notwithstanding their comparative recency, there is more uncertainty and confusion in the history of those times, than in that of the earlier periods of the kingdom. The coins Nos. 22 and 23, are two of several that have passed through my hands. They have no date, but their legend and the locale of their coinage leave no doubt as to the propriety of their ascription to this prince. The inscription reads from reverse to obverse—

السلطان ابن السلطان ناصر الدنيا والدين ابوالمظفر [فتحاباد]

نصرة شاه السلطان ابن حسين شاه السلطان حسينى خلد ملكه

Nasrat Shah came to the throne under the most favourable auspices, as far at least as regarded the internal condition of his government as bequeathed by his wise and vigorous father; but from his cruel and tyrannical disposition gave great disgust to his subjects and dependents. He was assassinated by his own servants after a reign, (according to historians) of eleven years. This would make the date of his death 938, (according to others it was 940 or 943,) but this does not agree with the date inscribed upon the next coin.

Nasrat Shah was succeeded by Mahmud Shah. This king is altogether omitted by the author of the Tabqât-i-Akbari, who ascribes all

Independent Muhammadan Kings of Bengal

Independent Muhammadan Kings of Bengal.

the events of his reign to that of his predecessor. Ferishteh briefly mentions Mahmud as a nobleman of Bengal; but he is correctly described in a Persian history of Bengal now before me, as the brother of Nasrat Shah. I have had several of his coins in my possession, but find room in the present plate for one only, No. 24. They are all distinguished by having a small circle on each face, concentric with the rim of the coin, containing what appear to be the words نذرشاهی

Reverse and Obverse read continuously—

السلطان ابن السلطان غیاث‌الدنیا والدین ابوالمظفر محمودشاه

السلطان ابن حسین شاه السلطان خلد الله ملکه و سلطنه

۹۳۳

and on some of the coins the place of coinage حنتاباد. It is the date upon this coin 933, which is so irreconcilable with the chronology of written history. Mahmud died according to Ferishteh in 945, and with him was extinguished the independence of the kingdom of Bengal. The city of Gour was invested by the hostile armies of the emperor Homayun, who, on its capitulation, held his court there for some months.*

Sometime, however, elapsed ere the kingdom of Bengal was finally attached to the Moghul empire; for the different rulers, who were from time to time appointed to administer the government in the name of the emperors of Delhi, omitted no opportunity of seeking to throw off their allegiance, and occasionally to a considerable extent succeeded in doing so. The coins of these rebellious subjects, from Shir Shah, who usurped under Homayun, to Daud Khan, when the kingdom was finally absorbed by Akbar, as well as of those who attempted independence before the dynasty of kings which we have just been considering, may furnish an interesting subject of future notice; more particularly, if collectors who may be in possession of specimens, would be good enough to communicate impressions or drawings of them.

* For an interesting account of the state of Bengal at this period and the circumstances attending its conquest by Homayun, the reader may consult Joao de Barros' work, *Dos feitos que os Portuguezes fizeram no descubrimento e conquista dos mares e terras do Oriente*; fourth decade, ninth book.

*Description of a new species of Tibetan Antelope, with plates.** *By* B. H. Hodgson, Esq., *Darjeeling.*

RUMINANTIA.

Capridæ.

Genus.—Gazella ? Capra ? *New Genus.*—Procapra mihi.

Generic Character.—Horns in the males only. Nose ovine; no lachrymal or inguinal sinuses; interdigital foss small; mammæ two.

Type.—P. Picticaudata mihi.

Rágóá and Góá of the Tibetans.

Sp. Ch.—Goat antelope; with medial, elliptic, black horns, inserted between the orbits, and directed upwards and backwards with a bold curve and slight divergency; the tips being again recurved forwards but not inwards, annulated nearly to the tips; the rings being complete, separate, and 25 to 27 in number; short, deep head, finely attenuated; large eyes; long, pointed, and striated ears; very short, depressed, triangular tail, and long and delicate limbs. Pelage consisting of hair only, of medial uniform length and fineness, varying with the seasons like the colour. Above, sordid brown,† tipt with pale-rufous; below, with the lining of the ears, the entire limbs almost, and a small caudal disc, rufescent-white; no marks whatever; no tufts to knees; tail black. Length from nose to anus about three and a half feet. Height about two feet. Horns along the curve, thirteen inches; straight, eleven inches. Habitat: the plains of Tibet, amid ravines and low bare hills: not gregarious.

The above generic character, it will be seen, is drawn up in conformity with the system of Mr. Ogilby,‡ who, being the latest, is probably the least inaccurate investigator of the vast and heterogeneous group of antelopes. But the fact is, that by far too little is yet known of the real and intimate structure of the majority of the species of this group, to admit of any present arrangement of its contents into generic divisions being satisfactory. A long tract of time will be needed to perfect our knowledge of recorded species; and in the meanwhile, it seems better to distinguish generically new species whose organization cannot be reconciled with the results of existing systematic researches, than to go on loading the antilopine mass with additional discordant

* The plates are being coloured and will shortly be published with the title page and index of the present volume.—Eds.

† In summer.—In winter canescent-slaty, smeared on the pale surface with fawn. Internally the hairs slaty blue.

‡ Proceed. Zoological Society for December, 1836.

Pl. N°1

Ovis Ammonoides of Tibet

Pl. No. 2

On Stone by J. Bennett

Procapra picticaudata type Goa of Tibet

Lithog.d by T. Black Cal

Pl. N°3

Ovis Ammonordes.

On Stone by J. Bennett

Lithogr. by F. Black Cal

Ovis Ammonoïdes from
The Nyon of Tibet

materials. Having said thus much in apology for bringing forward a new genus, I should add in explanation of my lengthy specific character, that a necessary regard to precision must render a dispensation with the canons of Linneus indispensable, so long as innumerable, vague, and shadowy species shall continue to be the plague of Zoological science. The exceedingly graceful little animal, which is the subject of our present description, is called by the Tibetans Rágóá, or Góá simply, and they allege that it is found generally throughout the plains of middle and eastern Tibet. But those plains, it must be remembered, are, for the most part, broken by deep ravines or low bare hills, and it is in such situations more especially, that the Góá dwells, either solitarily or in pairs, or at most small families, never in large flocks. The species is said to breed but once a year, and to produce ordinarily but one young-one at a birth, rarely two; and it is added, that it browses rather than grazes, preferring aromatic shrubs and shoots to grass, of which latter, indeed, its habitat is nearly void. I have not heard that the Góá is ever tamed, but it is killed for the sake of its flesh, which is esteemed excellent, and is free from all caprine odour, even in the mature males. In size, proportions, and superficial aspect, our animal bears considerable resemblance to *Antelope africana* and to *bennettii;* but not to *gutturosa*, with which last named species Mr. Blyth supposed it to be identical, upon inspection of a female transmitted last year by Dr. Campbell to the Asiatic Society. But the following description and drawings will serve clearly to distinguish it from all those species. The Góá is in size equal to *bennettii*, and is remarkable for the same exquisite grace and delicacy of form. The head is short, compressed, deep towards the horns, and thence much attenuated to the nose, which is neither bluff nor bristly, as in the Dseren and Chirú, but smooth and fine. The nostrils are narrow, nor do they, or the lips, show the least trace of a nude moist muzzle: the chaffron is straight; the eye very large, and (I am told), dark; the ears long, narrow, pointed, and striated. The horns, which rise between the orbits and are of medial size, larger considerably than in *africana* or *bennettii*, proceed upwards and backwards with a bold ibex-like curve, the last inch and a half only being somewhat recurved, and the divergency moderate and gradual, increasing almost uniformly from a basal interval of half an inch to a terminal one of four and a quarter inches. In young specimens the tips of the horns incline inwards as well as forwards, and as the backward arcuation of the horns is in them much less than in maturity, the horns of the young thus come to possess the lyrate form, which is hardly, or not

at all, noticeable in the mature animal. The horns are equally rounded to the front and back, compressed considerably on the sides, so that their basal outline is elliptic, and the compression and annulation extend to within one and a half inch of the tips. In a very perfect specimen now before me, there are twenty-seven rings, which go entirely round the horns, each ring being separate and distinct, and the longitudinal striation too faint to impair the continuity of the annulation. In the younger specimen, the compression of the horns is very trifling, and the rings, larger in front than elsewhere, are only six or seven in number; the animal being rather more than a year old. To proceed with the description of the mature male of the species, I may next note that the neck is rather thin, the body short and compact, the limbs long and exquisitely fine, the low hoofs compressed anteriorly, wide and rounded posteriorly, and that the false hoofs are large, but obtuse and adpressed. The tail is a mere rudiment, depressed, broad, triangular, entirely nude below, and furnished with radiating hairs, about one and a half inch long, on the sides and tip. The pelage or fur offers no peculiarity, consisting of hair only, neither fine nor very coarse, and of equable length of about one and a half inch. The scull presents the Cervine and Antelopine, not the Ovine and Caprine* form. There is no trace of suborbital, of superorbital, of maxillary glands or pores, nor of moist muzzle, nor of inguinal pores; and the interdigital pores, though distinct, are small. The females are hornless, and have only two teats, which are perfectly developed in the males also. There are no tufts to the knees, nor any of those marks upon the face, flanks, and limbs, which are so frequent among the antelopes. In regard to colour, my two specimens, which were brought here in November, and killed, no doubt, in summer, exhibit above and laterally, a dull and somewhat purpurescent-brown, freckled with hoary, owing to the pale fawn tips of the hairs, and below rufescent-white, which colour likewise is extended all over the limbs, over the insides of the ears, the back parts of the head (in the old animal), and the posteal margin of the buttocks, whence it spreads like a small disc round the tail, becoming also more rufous there; and thus the tail, which is black itself, assumes that contrast of colours that has suggested the specific name—Picticaudata. Dr. Campbell's specimen of a female is paler in colours than my males, the superior surface being hoary-blue or canescent-slaty; and as such, is the winter hue of so many other Tibetan ruminants; it is probably also that of the Góá. I have said that the limbs are entirely colourless; but there is, especially in

* See Journal Asiatic Society of Bengal, No. 111, for 1841.

young animals, a faint list of colour passing down their outsides to the hoofs. This species is said to be totally void of caprine odour in the living state. The skins certainly are so. The small testes are lodged in a neat hairy scrotum, and all the adjacent parts, including the groins, are entirely clad in hair, there being no trace whatever of those sinuses in the groin which are so highly characteristic of the most typical genera of the antelopes, that is to say, *Antilopa et Gazella* of the moderns. Still the Góá, in my judgment, is closely and essentially affined to the antelope group, by the extreme delicacy of its form; by its manners; by the cervine shape of its scull; by its black, round, and ringed horns;* and lastly, by the absence of caprine odour, notwithstanding that its structure, according to modern views, is caprine, not antelopine: and, in fact, it is throughout structurally a true *Capra* of Ogilby, save that the females are hornless. This character, together with the others just mentioned, forbid me, however, to class the delicate graceful Góá with the goats proper, whilst the ovine nose, and the want of suborbital as well as of inguinal sinuses, renders it impossible to range our animal with the proper Antelopes or Gazelles, though it is more nearly affined to the latter than to the former. The ovine nose seems to me a very important character; and Mr. Ogilby, when he classed the antelopes proper, typed by *Cervicapra*, in a family characterised by '*Rhinaria nulla*,' ought apparently to have given them as a subordinate and generic mark '*Rhinaria parva*,' because the nude moist muzzle is a material diagnosis, very decidedly forthcoming in the Antelopes, less so in the Gazelles. Col. H. Smith considers that Mr. Ogilby has laid undue stress upon the interdigital pores as a generic character; and yet Mr. O's. most accredited predecessors in classification had insisted upon the presence or absence of *this* character, *together with that of the suborbital pores*, as constituting the distinctive marks of Ovis and of Capra. True, they were in error in this instance, for goats *have*† interdigital, though not lachrymary, pores, and consequently Mr. Blyth's suggested genus *Ammotragus* is based on misconception, though accidentally true to nature, at least in my view of her, and without reference to systems. But, however falsely used heretofore, still it does not follow, that each of these characters (the pores) is not of importance, and there can be no doubt that either of them may be rationally presumed to be so, and to affect the conditions of existence, the habits, and economy of the animals; whereas, several of

* The form of the horns is rejected from modern definitions of genera, and wisely so *quoad* the particular flexure. But still I incline to the older notion that round, black, and ringed horns, as opposed generally to grey, angular-keeled, and nodose horns, serve well to indicate Antelopine or Caprine tendencies.

† Mr. B. expressly says *not*, and thereon founds his genus. Let him look at nature instead of books, and he will see his error.

Col. Smith's proposed diagnostics of genera have no pretensions to be so regarded.

With regard to the specific distinctness of the Góá, there must remain some doubt, until its essential and trivial characteristics, as above given, have been compared with those of the species it most resembles. Books cannot well be trusted on this head, and the whole of my collections have been deposited in the British Museum. The size and proportions of the Góá are quite those of *bennettii*, and both species are alike distinguished by black tails and horns of somewhat similar form. But the difference of habitat, of pelage, of colour, the inguinal pores, knee tufts, and females horned of *bennettii*, not to mention differences of detail and of size in the horns and tails, sufficiently distinguish this species from the Góá. *Antilopa arabica*, or the Ariel, has (like *bennettii?*) the structure of a true Gazella of Ogilby, which at once suffices to prove its distinctness from our species, not to dwell on diversities of colour, manners, habitat, &c., all very obvious. Lastly, *gutturosa*, or the Dseren, is a much larger animal,* with much smaller horns; and its suborbital pores, its knee tufts, its protuberant larynx, and glandular preputial bag, are all marks impossible to be mistaken, and not found in the Góá.

The following are the dimensions of a fine old male of the Góá:

Snout to rump,	3	7	
Height at shoulder,	2	0	
Head to occiput,	0	8	
Head to base of horns,	0	6	
Tail,	0	0	3-4
Ears,	0	5	
Fore-leg, top of cannon-bone to end of hoof,	0	9	1-8
Hind-leg, ditto ditto ditto,	0	10	
Horns, length by curve,	1	1	
Ditto ditto, straight,	0	11	
Ditto, greatest divergence,	0	4	3-10
Ditto, basal interval,	0	0	4-10
Ditto, terminal interval,	0	4	3-10
Ditto, periphery of base,	0	†	

On the Wild Sheep of Tibet, with plates.

CAPRIDÆ.

Genus.—Ovis.

Species.—O. Ammonoides mihi.

In No. 111 of the Bengal Asiatic Journal for 1841, I have described two species of wild sheep belonging to the Himalaya and Tibet. Having recently received a splendid specimen of the male of one of these species, I recur to the subject with a view of more fully fixing the characters of this animal, whose close affinity to the Argali of Pallas renders

* The Dseren is 4½ feet long, and 2½ feet high. Horns 9 inches.

† Sic in MS.—Eds.

it somewhat difficult of satisfactory discrimination. To Dr. Campbell's kind arrangements in my favour, I am indebted for this specimen, as well as for the Góá, which were all received in November and killed in the summer, and hence exhibit the summer dress of the animals.

The present specimen of the *Ovis ammonoides* is that of a male of eight years, and having the scull and members complete, and being otherwise in perfect condition; it displays the characteristics of the species in a most satisfactory manner.

This magnificent species of sheep measures from five and a half to six feet in length, exclusive of the tail, and from three to three and a half feet high at the shoulder. My undistorted specimen, as laid simply on the table, gives the former dimensions, and the latter, with a slight degree of tension. The head to the occiput (straight) is seventeen inches, and twelve inches to the base of the horns. The tail is but two and a half inches long, or three and a half with the hair; and the ears are four and a quarter inches. The horns, by the curve, are above three feet, and they have a basal girth of fifteen inches; the age of the animal being eight years, as marked on the horns. The stately and rather large head, has great breadth, and still greater depth at the insertion of the horns, and is thence gradually narrowed to its fine nasal extremity. The forehead is concave,* exhibiting a considerable dip from the crest of the frontals to the fore-angles of the eyes. The chaffron is straight, or arched only in the slightest degree. The nostrils of the ordinary ovine shape, have their mere margins, and a confluent stripe down the front of the upper lip, nude. The eyes are of medial size, and beneath them are the usual lachrymal sinuses, deep but immobile, and of good size, but hid by hair which clothes them inside and out. The ears are small, narrow, pointed, and striated. The massive horns are inserted obliquely on the top of the head, considerably behind the orbits and in contact. They are triangular and compressed, having nearly twice as much depth as breadth at the bases. Their frontal aspect, which is presented directly forwards, is flat, and is extended nearly to their tips with gradually diminishing breadth. Their dorsal aspect is in general, cultrated, but widened roundwise towards their bases. Their lateral aspects or sides are, the inner one, nearly flat, or somewhat concaved, and the outer one more plainly convexed; and thus, though the trigonal form of the horns is decided, it is not perfect; the outline of the base being ovoid.

* Cuvier says, Ovis has a convex, Capra a concave, forehead; and he even makes generic marks of these peculiarities. But in Cuvier's day, genuine wild specimens of either genus were too rare to admit of just discrimination and definition of generic characters.

The transverse wrinkles are very numerous and conspicuous, exhibiting on the frontal surface a succession of large ridges and furrows: on the sides of the horns they are much less developed, particularly on the inner side, and they gradually diminish from the bases of the horns to the tips, the last five inches being void of them. The curvature of the horns describes a fine backward and outward sweep, and thence downwards and forwards, so as to complete about two-thirds of a circle, when there is a second retroversion, leaving the points directed forwards and outwards with an inclination backwards, as though, in old age, there would be a second spiral curve. The neck is rather thin, the body full, and somewhat elongate; the limbs elevated, clean, and strong. The hoofs, which are very fine, hard and black, are less deep and perpendicular than in tame sheep, and rest on longer laxer pasterns. The hoofs are compressed and scooped beneath anteriorly; broad, full, and rounded posteriorly, or in the position of the *frog* of solid ungula. The false hoofs are large, but not salient or pointed, being blunt tubercles rather. All the four* feet have interdigital pores of good size, in which some cerous matter is lodged. The small stag-like tail is cylindrico-conic, clad beneath towards its tip, and scantily furnished with hair, which seems as though it had been rubbed off.

The pelage, or vesture, consists entirely of hair, without a trace of wool beneath it. The hair is of the usual coarse, brittle, quill-like, and internally wavy character, and on the body generally is only three-quarters to one inch long; on the under-surface of the neck two and a half inches, and on the limbs and head is close and fine, with not half the length it has on the body. The elongation of the hair on the abdominal surface of the neck, extends from the throat to the chest, and is distinct upon close examination, but not otherwise, for there is no appearance of a pendant mane. The colour on the dorsal surface of the animal is saturate dull-brown; on the flanks, entire head and neck, and fronts of the limbs, the same, but mixed largely with hoary, so as to create a pepper-and-salt hue almost; on the belly, insides of the limbs, margins of the buttocks, tail, and a large disc round it, rufescent-white. There is no black or dark stripe down the vertex; but the highest part of the body is the darkest, and is nearly black, the colour being extended in a line to the tip of the tail, so as to divide the white disc and tail in a

* I am thus particular as to this organ, because there is much yet to be learnt about it in regard to all the Ruminants: for example, the Mantjac of the Sub-himalayas (Cervus ratwa) has these digital pits only in the hind-feet, and the Saumer (Cervus aristotelis) is devoid of them entirely, though the best books say otherwise. I speak by virtue of old memoranda, having no specimens of these deer now to refer to; but those I examined were *alive*, and I think I noted carefully.

notable manner, though the disc itself be vaguely defined. Such is the summer garb. In winter the dark hues are much paler; the back and flanks being slaty-blue internally, but canescent-fawn on the surface. The female of this splendid species is worthy of her mate, being little inferior to him in size, and provided with a fine pair of horns. I possess two good specimens respectively, of eight and nine years old; and, as a very slight degree of tension applied to the skin of the larger, (which is not distended in the curing) gives five and a half feet for the length, and three feet for the height of the animal, I apprehend that the male cannot be less than six full feet long, and three and a half high, and consequently, that six and five and a half feet, and three and a half and three feet, may be safely assigned as the respective sizes of the sexes in length and height. These females were killed, like the male, in summer,* and they resemble him in colour and aspect so closely, that it becomes only necessary to add to the subjoined details of dimensions a notice of the female horns. The horns, then, have the same characteristics as those of the male, but softened and exhibited on a smaller scale. They are, in fact, about half the size of the male's horns, but being less curved, they make a greater longitudinal show in proportion to the size than his. Their thickness, like their length, is about half that of the male's horns. They are very much smoother, and by their diminished thickness, they are separated at the bases. Their flat frontal aspect is not extended far up, owing to the greater compression of the horns; but that aspect, being presented directly forwards, as in the male, is very palpable towards the base of the horns, which ascend with a sickle-like bend upwards and outwards, greatly divergent, but not describing more than a half of the concentric or circular curve. Thus their points are bent down with yet a faint indication of the second retroversion, so that there is a slight obliquity outwards of the blunt downward tips. The suborbital and interdigital sinuses are very distinct in these females, but the caudal disc less so than in the male. Their tails are *very* short, and the chaffron of the females is perfectly straight, from the setting on of the horns to the nose. The teats are two.

The following are the detailed dimensions of both sexes:—

	Male.	*Female.*
Length from nose to anus,	5 8	5 4
Height at shoulder,	3 2	2 10½
Head to occiput.	1 5	1 2
Head to base of horns,	1 0	0 11

* One of the females still retains enough of the winter garb to show that the winter colour of the species is slaty-blue, overlaid on the surface with fawn, or pure fulvous. In the summer garb the dark or black-brown of the upper-parts is extended very low on the flanks, behind the elbows; and the dark list down the limbs is very palpable, though much mixed with hoary.

Head, width of, between the outer margins of orbits,	0	8	0	7½
Head, depth of, from frontal crest to lower edge of jaws,	0	9½	0	0
Head, length of, from nose to fore-angle of eye,	0	9½	0	8¾
Fore-leg, top of cannon-bone to tip of hoof,	1	2½	1	0½
Hind-leg, ditto ditto,	1	4½	1	2
Ears,	0	4½	0	4½
Tail only,	0	2¼	0	1¼
Tail and tuft,	0	3¼	0	2¼
Length of fore-hoof,	0	3¼	0	3
Breadth of ditto,	0	2¼	0	2
Horns.				
Length by curve,	3	1	1	7¼
Basal, depth of,	0	6	0	2⅝
Basal, width of,	0	3⅜	0	1½
Basal interval,	0	0½	0	1⅜
Terminal interval,	1	8½	1	3½
Circumference of base,	1	3½	0	8

Remarks.—No great while ago only two or three species of wild sheep were recognised by men of science. But Mr. Blyth has all at once produced a splendid cornucopia of species,* founding many of them however, upon an inspection of the horns solely. I question the possibility of so establishing species or genera in this group; and, as a proof of the necessity of examining carefully the *entire structure* of the animals, I need merely refer to Mr. Blyth's signal error, already adverted to, in reference to the organization of Capra or the domestic goat, and to an oversight equally important to be mentioned presently. A strong conviction of the necessity of extreme caution in the examination of the Capridæ, while it must serve as an apology for the tediousness of the present paper, will, I trust, by its results, enable those who are in possession of Pallas' *Ovis ammon* and Dseren, to determine whether I have, or have not, justly made out the distinctness of my *ammonoides* and Góá. In further proof of the necessity of extreme caution and of research carried into the entire structure of the Capridæ, I may mention that my *Ovis nahoor* is, like Tragelaphus, devoid of the suborbital sinus, whether in the scull or skin. In drawing up my original description of this species, I too easily presumed that these organs were forthcoming; but in my amended description I noticed the absence of all trace of them in the scull, though still without advertence to the skin. Further conversancy with nature has, however, since then given me a greater distrust of books, and, having recently procured a fine specimen of the Nahoor, I ascertained beyond a doubt, that the animal, though possessed of interdigital, is entirely devoid of suborbital, pits. Simultaneously I obtained two specimens of Mr. Blyth's *Ovis barhal*, and found them also provided with interdigital, but wanting suborbital, sinuses, as in the Nahoor, from which species I now incline to regard

* Proceed. Zool. Society, August, 1840.

the Barhal as distinct. And, as these round-horned sheep, void of the lachrymal pits, unmaned, and furnished with a well developed tail, appear to form a natural group, distinct from the Argalis, and from Tragelaphus—also a separate type apparently, however misdiscriminated by Mr. Blyth,—I beg leave to suggest for this group the generic appellation Pseudoïs (ψευδος et οϊς) lest, as has too frequently happened to me, some closet systematizer, who never was at the pains to examine nature for himself, should step in "to name and classify" (the work of a moment, *as ordinarily done,*) my discoveries. The Argalis and Moufflons (not to mention the Tragelaphi) seem to form two striking groups among the wild sheep: our Nahoor is a complete Moufflon: hence it occurs to me to ask, if the Corsican animal is, like the Himalayan, devoid of suborbital sinuses? This query may seem presumptuous; but any one who will refer to the Proceedings of the Zoological Society for March 8th, and November 8th, of 1836, may satisfy himself that this sort of analogical inference led me justly to determine, without having seen it, the structure *quoad hoc* of an animal (Cambing útan), which the learned of Europe had long been in possession of, and yet had mis-stated that structure. To come nearer to the point, Mr. Blyth, a professed naturalist, even while writing a monograph on Ovis, and insisting on the distinctness of his *Ovis barhal*, has entirely neglected to notice that striking structural peculiarity, the absence of the suborbital sinus. Should the Barhal and the Nahoor prove to be distinct species, and I now think they may, we shall have, already, two types of Pseudoïs, and I suspect the Moufle will make a third. Mr. Blyth's industrious researches indicate at least, if they do not prove, the existence of many wild species, which, if substantiated, will doubtless be found to present several peculiarities of organization of generic or sub-generic value. That gentleman is still sanguine as to the discovery of more new species: but I cannot agree with him, when he insists that none of his numerous wild species can be regarded as the type of the tame animal, *because* all varieties of the latter exhibit long tails. Now the several varieties of the tame sheep in the Sub-himalayas and Tibet, six in number, as known to me,* have all of them short deer-like tails, and some of them in the form of their horns resemble *ammonoides;* and all, like *ammonoides*, possess the feet and eye pits. The Highlanders have such a horror of long-tailed sheep, that they will not even let them graze in their fields! Wherefore, Mr. Blyth has not far to look for tame sheep with short tails.

* The Húnia, the Pélúk, the Silingia, the Barwâl, the Cágia, the Hálúk.

Notice of the Nicobar Islands, by the Reverend P. Barbe.

The Nicobar Islands, lying between the sixth and tenth degrees of north latitude, have for sometime attracted very much the attention of the public in India, not so much on account of the productive qualities of their soil, but because of the Islanders having committed repeated murders on the crews of several vessels under the British Flag. Vessels sailing from the Coast or from Penang have, for a long period of years, touched there during the NE. monsoon to take a cargo of cocoanuts, as do also large China junks, Malay prahus, and Burmese boats from Bassein, Rangoon, and the Tenasserim Coast. Not a single year has passed without hearing of some vessels or boats being lost. But as no one suspected the Islanders to be capable of piracy, the loss was always attributed either to bad weather or to the incapacity of the captains. It is but a few years since Government has been convinced, that the Nicobarians, although destitute of real courage and bravery, have been guilty of the greatest crimes, in murdering peaceful people, who could not suspect that the natives, whose appearance is so simple and timid, would ever conceive and dare to execute such treacherous designs. So there is very little doubt now, that a great part of the vessels which were supposed to be lost in the Bay, have been cut off and plundered by the natives of these islands, and their crews found there a watery grave.

The various islands forming the group of the Nicobars are Chowry, Teressa, Bompka, Tilhanchong, Karmorta, Nancowry, Katchall, Car-Nicobar, the Little Nicobar, the Great Nicobar, and some other smaller islands. The SW. monsoon begins in the latter part of May and lasts till October. During that period, rain falls in great abundance, and the wind blows hard: there is a heavy swell, and it is dangerous to approach the islands. Few vessels touch there during that monsoon; but in the NE. monsoon, vessels, and Burmese, Chinese, and Malay boats are seen there taking a cargo of cocoanuts, betelnuts, and collecting birds' nests, trepan or sea-slug, ambergris, tortoise-shell, &c. They give in barter black and blue cloths, coarse handkerchiefs, red cloth, cutlasses, Burmese daws, silver or German silver spoons, ardent spirits, tobacco, red woollen caps, old pantaloons and jackets, black hats, &c. When a vessel reaches the place, the people of the village contract for supplying a cargo

in so many days, and they seldom fail to fulfil their engagement; they take in advance generally the goods given in barter.

The Nicobarians are not very expensive in their dress: a small piece of blue cloth, from three to four inches broad, and four or five feet long, tied round their loins, is the covering of a man; sometimes they encircle their heads and loins with young branches or grass. When the headmen of the villages go on board the vessels, they are more decently clad: they have a black hat or red cap, coat, jacket, pantaloon, &c. The women in opposition to the custom of persons of their sex in other countries, shave their heads, wrap round their loins grass tied with a string, about a cubit broad; and on great occasions a piece of blue cloth over the grass. When they appear in public, they generally cover their breasts. Men and women use so large a quantity of betel-nuts, lime, and betel leaves, that their teeth are as black as ink; and the space between them, being filled with that matter, they appear as a solid piece, much like the horn invested in the jaws of the tortoise.

It is very difficult to have an accurate notion concerning the origin of the Nicobarians. They have projecting cheek-bones, flat visages, flattened nose, scanty beard, straight black hair, and Chinese eyes. Their complexion is dark-olive; they are corpulent, muscular, and well-made; but their legs are rather short in comparison with the trunk; the lower extremity being more developed than the upper one. Their general size is from five feet to five feet two inches. But the inhabitants of Chowry are of a darker complexion, more muscular, and have an air of independence, which is one characteristic mark of the Burmese. I saw some men and women at Teressa belonging to Chowry, and judging by them, the general height of these Islanders must be from five feet five inches to five feet ten inches. Although these people appear to hold some relation to the Malays on account of the resemblance of many of their features, yet the shape of their eyes, their manners, religion, language, and many characteristics are so different, that they must be considered as a particular race. The Malays having not settled there, the Nicobarians have preserved the pure blood of their ancestors. I am not far from thinking that they belong to the same race of people who formerly lived on the sea-shores of Sumatra. When the Malays settled in the island, they took possession of the whole of the level country, and compelled the Battas, the original inhabitants, who would not mix with

them, to take refuge in the interior of the island, so that race is now master only of the mountains.

There is a tradition amongst the Nicobarians, that the first stranger who came to their island, seeing something moving on the sand, perceived small persons of the size of an ant. He took care of them till they attained the common size of men, so began the origin of the Nicobarians. According to another tradition, a man sprung out from the ground, and taking a bitch for his wife, had two children, who, in the course of time, peopled the island. A man murdered was buried, and from his head sprung the first cocoanut tree; sometime after all the inhabitants were destroyed by an inundation, with the exception of one man and one bitch, who again peopled the island. In the course of time a vessel having a prince for captain, visited Teressa, who on his landing was murdered by the inhabitants; his wife was taken on shore, and treated with the greatest respect, but the spot on which was shed the blood of her husband, being always before her eyes, she was very unhappy. On one night she was advised in a dream by her mother to remove that bloody spot from Teressa: she did so, and then Penboka was separated from that island.

The inhabitants of Teressa believe that the people of Nancowry are the descendants of Malays, who, visiting in their fishing excursions that island, lost their boats and settled there. The Car-Nicobar people are, according to them, descendants of the Burmese, who in a revolution which took place in their country, were obliged to run away from the Tenasserim Coast, and landed at Nicobar.

The dialects spoken by the Islanders differ more or less; and the difference does not arise only from pronunciation, but from a great many words which are not the same; so that the inhabitants of one of the islands can scarcely make themselves understood by the inhabitants of another.

The Islanders having no written language, the few words to be found at the end of this letter, have been therefore orally communicated to me. I wrote them as the sounds occurred to my ear; without presuming to say that I have succeeded in representing them correctly.

The Nicobarians shew great skill in the building of their houses and boats. Their dwellings are strongly built: they are supported by large posts, and are elevated above the ground from eight to nine

feet. The flooring, which is made of planks, has a circular form, and the roof, which has the shape of a bee-hive, is covered with grass called Lalung by the Malays, about a foot thick. They are without windows, nor have they any partition. The entrance is from below: these houses will last from ten to twelve years without repairs; and there is no other furniture but earthen pots, cocoanut-shells to carry water, a round piece of wood which they use for a pillow, spears, knives, swords, and the ika, which is their general food.

Their boats vary in size from six to twenty feet long, and from two to four feet broad, having an outrigging: they are generally safe: two or three poles support their sails. It is a pleasure to see how well these natives manage their canoes when meeting the surf.

These Islanders are lazy and inactive, cowardly, treacherous, drunken, and I am sorry to say, that crimes against nature are not unknown to them. Every evening the villagers meet in one of the houses, and there they spend part of the night in drinking, singing, and dancing. Like children, they desire every thing they see, without troubling themselves whether the object be useful or not. When a vessel arrives, the headman of the village in his best dress goes on board, accompanied by some other persons, whom he always calls his children. They offer to the captain young cocoanuts, yams, and plantains. If asked what they wish to have in return, their answer is—*Hahekienten man*, which means, 'You are my father.' Although they seem to have no wish for all that they see, yet they expect to get drink or something else. The headman then hands the certificate he has received from former captains. It is impossible to avoid laughing when the high sounding names of Byron, Smith, Rodney, Nelson, &c. are given to the bearers of the certificate. If a captain treat some of them very kindly, and make to them some presents, he is sure that some of the Islanders will be called after his name. In the year 1832, I saw at Rangoon two persons from Car-Nicobars; they paid a visit to the Italian Bishop who was there, and they were so much pleased with some trifle they received from him, that the old man told him, 'My name being Captain John, I cannot take your name; but my son not being Captain yet, he shall be henceforth called Captain Bishop.' The Nicobarians have different names. If they go on board an English vessel, they take an English name; if on board a junk, they take a Chinese name, &c.

The Nicobarians appear to have a great facility for learning languages. I do not mean to say, that they speak the languages very well; but they are able to make themselves understood in many. The Portuguese, spoken in Mergui, is their favourite language; and the respectable people of the different islands are more or less acquainted with it. The Malay is well understood by some of the people of Nancowry, and the Great and Little Nicobars; some of the people can speak a little English, Burmese, Chinese, Hindustanee, &c. &c.

In mentioning the character of these people, I have stated that they are treacherous, and as a proof of it, I shall relate the following facts:— In 1833, a Cholia vessel was cut off in the false harbour of Nancowry, and every person on board murdered. In 1839, the pilot of a Whaler being anchored at the same spot, the captain, some of the officers, and the greater part of the crew, were slaughtered by the natives. In 1844, Captain Ignatius Ventura, from Moulmein, commanding the *Mary*, anchored on the north side of Teressa, at two o'clock in the afternoon: one hour after, the captain and crew were murdered. In the same year, Captain Law met the same fate at Karmorta. Another vessel, three years ago, after having taken part of her cargo at Katchall, sailed to the false harbour of Nancowry to complete her cargo, there also the captain and crew were slaughtered by the natives. The headman of Katchall, who had given a part of the cargo to the above vessel, related the fact to me. He spoke in the highest terms of the captain of the said vessel, as likewise of Captain Ventura. I was well acquainted with the last mentioned person; he was most kind and honest, consequently incapable of provoking any person. But it appears that it was not so with the vessel first mentioned, they highly exasperated the natives by their conduct.

It does not appear that the Nicobarians have any exact idea of a Supreme Being. They say, it is true that there is a great spirit, whom they call *Reos*. But I suspect that this word they have received from the Christians of Mergui, who have been visiting these islands during the last two centuries: the words Deos and Reos are so nearly alike, that the one appears to be a corruption of the other. They admit the existence of spirits to whom they attribute sickness, death, and scarcity in the crops; they offer them pigs, fowls, &c. to propitiate them. Once in the year, and sometimes when great sickness prevails, they build a large canoe, and the Minloven, or priest, has the boat carried close

to each house, and there, by his noise, he compels all the bad spirits to leave the dwelling, and to get into the canoe; men, women, and children assist him in his conjuration. The doors of the house are shut; the ladder is taken out; the boat is then dragged along to the sea-shore, where it is soon carried off by the waves with a full cargo of devils; those malignant spirits are effectually prevented from taking their abode again in the village by a screen made of pieces of cloth, which keeps out of their baneful sight, the place where the houses stand. This feast, which takes place at the end of the SW. monsoon, is called by the Nicobarians *Kew Hivee*. In the beginning of the NE. monsoon, all the women are obliged to fast for three or four days. During that time, they dress as mad persons, and go from house to house singing and dancing. The Nicobarians have also in their houses idols of the most ugly shape, representing men and women; some with European dress, and some with the scanty dress of the natives. They have short and thin legs, and a large belly, and from their necks hang spoons, cocoanuts, &c.

The Nicobarians have such a high idea of the power of Europeans, that to them they attribute the creation of their islands, and they think it depends on them to give fine weather, nice breezes, &c. They are convinced that the *Minloven*, can cure every disease, make people sick, and also deprive them of life. Should any one be suspected of causing death, the villagers would immediately kill him: this has been the case several times. When the French Missionaries were living at Teressa, the villagers went to them on several occasions, saying: 'Senhor Padre, give us some rain if you please; our yams are dying, we know you can do it if you like.' And on one occasion, the priests were threatened to be murdered if there was no rain. On the following day, fortunately, a strong shower fell during the night, and the people thanked them most cordially. One of the clergy, being on board of their canoe in his way from Chowry to Teressa, the crew told him—'Senhor Padre, some breeze if you please': sometime after, the wind blowing a little fresh, '*basta*,' cried they, 'it is enough, do not give any more of it, otherwise the boat will be capsized.' One day, Gold Mohur, who is the most respected man of the Laxis, a village situated at Teressa, went to the Missionaries, telling them—'You think perhaps that the inhabitants of this place are bad people. I will convince you of the contrary; to-morrow I will

take all the inhabitants to you, and by examining their hands, you will see that there is not a single murderer amongst them.' When I was at Katchall, speaking to some of the people about the murder committed on board of vessels, every one of them showed me the inside of their hands, saying, 'Is there any spot of blood on them?' These people are convinced that Europeans, by looking into their hands, know if they have been guilty of some crime.

The population of the Nicobar Islands is from six to seven thousand souls. The whole of them live on the sea-shore: their villages, which are surrounded by cocoanut and betelnut trees, are small; seldom more than three or four houses are seen on the same spot. The men have only one wife with the exception of those of Chowry island. The women enjoy the privilege of divorcing when they think proper; so, should another man captivate their heart, they send away the first husband, and associate with the man who has been fortunate enough to please them. Not having children being considered as a curse, in that case the separation always takes place. I saw at Teressa, a woman who had been married on that account nine times. It is the custom for young people to live one year as husband and wife before the marriage ceremonies take place. Should they live on good terms, and be happy during that period, then the couple is united in the presence of the villagers, and of the Minloven. A feast is given to all the friends and relations; large pigs are killed; those that are invited daub their faces with the blood, &c. Should the husband die, the wife is seldom married again.

The women during their course, daub the whole of their body with the blood of pigs and fowls; and they drink freely the water in which they have infused several roots. When *enceinte* dancing and singing are not allowed in their village; nor can the relations sell pigs or fowls to make curry. When a child is born, it is a great rejoicing amongst them: they feast for several days. When a person is sick, they hang to his neck young cocoanuts, a spoon, and small carved figures, to amuse the spirit; small baskets filled with betel leaves are suspended to the trees, and the Minloven is sent for. He never gives any medicine, but excites friction on the different parts of the body: he binds the members of the sick in different directions; claps his hands, and makes a great deal of noise. He gives orders to the relations to cut some of the trees, and to tie to the posts of the house some of their

branches, with young cocoanuts. Should the person be in his last extremity, the Minloven gives a song of farewell. Friends and relations never cry at the death of a person: their mourning is in the shaving of their heads: the villagers go to the house where the corpse is, and there they drink till they are intoxicated. A coffin is made of a boat cut in two, and some hours after the death, the body is carried to the grave, on which they put cocoanuts and plantains; the Minloven, taking wooden poles, goes to the sea-shore, and fixes them in the sand in such a manner, that when left to themselves, they fall; he then takes them again and throws them in the sea: when he reaches the village, he makes a great noise, and the villagers throw out immediately the ashes they have in their houses. If the dead be poor, a few days after the burial the corpse is taken out from the grave; they bring it to all the houses of the village, and from thence to the place where are the bones of the persons who died before him. They hang the coffin between two trees, six or seven feet from the ground: when the string is rotten, the coffin falls, and the bones are partly eaten by the pigs. Should the dead be one of the captains, the corpse remains in the grave for three or four months. Some people in their best dress go to call relations and friends from the other villages to remove the bones; the pigs of the largest size are killed, and singing, dancing, and particularly drinking, are kept up for several days. When a person dies, the villagers cannot go on that day to the jungle, fearing to be killed by the Hivie or spirit: they abstain also from the food to which the deceased was partial.

The Nicobarians give credit to dreams; and are much addicted to superstition. They will not cross a jungle carrying any box, nor will they use nails in the construction of their houses. They never bathe alone; nor will they go to the burial ground; nor will they cut large trees in the forest, before offering to the spirit, who resides there; nor will they eat at the same meal, pork and turtle. When in their boats, after drinking the water of young cocoanuts, they are very careful not to throw into the sea, the shells. Before they build a house, the Minloven is called to choose the spot, and by different ceremonies, he compels the Hivie to leave the place. When a new canoe is to be launched, a fire is lighted round it to compel the spirit to quit the boat. These people have the idea, that some have it in their power to cause a person's death merely by thinking of it; and should a villager dream

that such a one is doing so, there is no other means to escape but by going immediately to another island. The greatest part of persons seen in islands where they are not born, have been compelled to leave their own on this account. If the dreamer mention his dream to no one but to the heads of the village, the sentence is passed, and the eaters of men, as the Nicobarian call them, are taken and fastened to a tree close to the village, leaving them to perish by hunger: no friend, no relative, would give them any thing to eat. Some years ago, a young woman of Teressa was starved on that account, and it was but on the seventh day that death put a stop to her sufferings.

The Nicobarians never use any thing taken from a vessel on which a murder has been committed, before the Minloven has, by prayers and supplications, purified the articles; being under the persuasion, that if they did not resort to such expedients, the spirit of the murdered person would inevitably kill them.

In Nicobar, every one is his own master, even children. Persons who have been in foreign countries, are respected, and have some authority over their countrymen. Such is the case also with aged people, and persons who have a great number of cocoanut trees and many pigs. But there is not a single person in all the Nicobars, who has it in his power to exercise controul over, I will not say one of the islands, but even a single village, should a person be guilty of a grievous offence, or of repeated thefts, he is compelled to leave the island. Some years ago, a person who had been sent out of Teressa for robbery, returned thereto; and as he was following again his old trade, he was stabbed to death by the order of the head people of the village. I think that such occurrences are very rare, as it appears that there is a general good understanding and union amongst them.

The prevailing food of the Nicobarians are pigs, poultry, turtle, fish, cocoanuts, yams, ika and fruits.

The pigs, which appear to be derived from the Chinese breed, being fed on cocoanuts, are very fat, and their flesh is of a superior flavour. Although they are to be found in every island, Teressa is the place where they abound. Some of the villagers of Laxis, have as many as sixty or seventy. They are let loose in the jungle; the owner calls them every day by striking on a plank with a stick; on their hearing the noise, they run instantly in the direction of the shed where the cocoanuts are

kept. After they have fared on the allowance, which consists of two cocoanuts for each, they return to the forest. Although there are many sheds to which the pigs are called in the same manner, those brutes, however, never mistake the place where they have to look for their food. This mode of living, gives to those animals the appearance of wild pigs. I saw some of the young ones variegated, reddish, and whitish. A large pig is sold for four or five rupees; but if cloth or knives are given in barter, then it may be had at half that amount. White pigs are very scarce. I saw two at Teressa, and the owners would not part with them on any account. Should the authors of culinary books require a new system for cooking meat, I will gratify them with a receipt on that *imvigor* in use amongst the Nicobarians. Having killed the pig, daub your face with its blood, cut the animal in pieces, put it on the fire for one or two minutes, until the hair is burned off, then take off instantly and eat.

The fowls are scarce, and if bought with silver, they give but two or three for a rupee; but the same number may be had for a common table knife, old or new.

Although there is plenty of fish about the islands, the natives having no nets, catch but very few. Their only mode of fishing is with a basket and harpoon. Great skill is displayed both by old and young in using this instrument; seldom missing their aim. A part of the fish caught is generally eaten raw on the spot, and the remainder is taken home to the family to be eaten in the same plain manner.

Different species of turtle are found at Nicobar; amongst them is the imbricated turtle which furnish the tortoise-shell: the flesh being unwholesome, cannot be eaten. But it is not the same with the green turtle, whose flesh supplies good food, and whose eggs are fine eating: they are particularly common at Car-Nicobar. The natives take advantage of the time when the turtle deposit their eggs in the sand during the night, they approach them slowly, and turning them on their *carapans*, they leave them in that position till next day, when they carry them home. These turtles, lay about one hundred eggs at a time.

The group of the Nicobar seems to be the land of cocoanut trees. I have never seen any country where they grow so well and in such abundance; the water of the young cocoanuts is superior in flavour to any I have tasted elsewhere. If Providence had not provided those

islands with these useful trees, I know not what would become of the inhabitants; and I am sure, that the greatest punishment which could be inflicted on them, would be the cutting down of these trees, on which they mostly rely for their subsistence. Having no rice, the nut is its substitute; and the cocoanut water is their general drink. Being very lazy, they never climb up the trees to get the ripe fruit, but let them fall of themselves, leaving them at the foot of the tree till they are wanted. The only thing which can induce them to climb up, is to get the young cocoanuts, in order to obtain the water to drink or the toddy, which, when fermented, is an intoxicating liquor; there is no house without a supply of it, and the first thing that is offered to a visitor, is a cocoanut filled with that stuff. Men and women indiscriminately climb the trees, except at Chowry, where none but persons of the fair sex enjoy that privilege.

The Nicobar yams have a particular taste and flavour, which they lose in part when transplanted in other countries. Although very little trouble and care is necessary for their growth, yet the Nicobarians, through carelessness and indolence, allow themselves to be deprived of that wholesome root, during six months in the year.

The *eka, or ika, or milor*, as it is called by the Portuguese, is a fruit of the size and shape of the jack; weighing from ten to fifteen pounds. It grows on a tree which is from twenty to thirty feet high, the trunk is *funili formis, foliis pinearis*. The fruit being boiled, the edible part is separated from the filaments with a shell, which, for greater convenience (the women alone perform that work) is held between the toes. This being done, they make it into loaves, weighing from ten to twelve pounds each; it will keep for several months. When the natives take their meals, they cut a slice of it, which being mixed with the kernel of the cocoanut, affords them substantial food. This bread resembles much in taste and colour the sweet potatoe. These trees grow in all the Islands.

The fruits the most common are plantains, papayas, and jacks. I have seen some oranges and sweet lime, but of an inferior quality. There is scarcely any marked difference in the soil of the various islands of the group; and therefore what grows in one of the islands would equally be found growing in the other. To certain islands, however, is allowed by natives the privilege of growing certain articles, which is

denied to the other: thus Nancowry is the only island in which paddy can be sown, &c. These restrictions extend not only to planters but affect also tradesmen: for instance, boats are to be built at Nancowry: earthen pots are to be manufactured at Chowry: lime is to be burnt at Car-Nicobar. The Islanders are obliged to have recourse to the above mentioned places for those articles. This practice seems to be the result of a rather sound policy, the object of which is to establish, and keep up an uninterrupted intercourse between the people of those various islands. Who would have suspected the Nicobarians capable of so wise a political institution ! ! !

The Great Nicobar is remarkable for the height of its hills, rising in succession, and covered with thick jungle. The inhabitants are few in number, and for their having an almost continuous intercourse with the Malays, some of them are tolerably acquainted with their language. The captain of the Steamer *Ganges* paid a visit to that island, and having anchored his vessel in the bay on the south-east side of the island, proceeded in his boat to survey the river as far as twenty miles up. The soil appeared to him to be very rich, particularly on the left side. He saw some deserted huts and a few plantations of cocoanuts. In some places the river was very wide, and he never found less than two fathoms of water. He reached a place where there was a fence, about two feet high. A shed was erected inside, but the inmates having, it appears, heard the noise of oars, had all fled: on the fire was *ika* half-boiled, not in earthen pots, as used by the Nicobarians, but in the broad and thick leaves which surround the betel-nut, made in the shape of a pot. In the same enclosure were also pigs and fowls.

The interior of this island is inhabited by a race of people distinct from those of the Nicobars. It is said that this tribe is barbarous, and much inclined to warlike excursions to the great annoyance of their neighbours; they are of a dark complexion, and have curled hair. It is a great pity that we know so little about a people, who having had hitherto no intercourse, nor the least communication with any other race, and being left to their own resources, could give us an idea of what man is when he has no other guide for his conduct, but the dictates of his vitiated nature. This tribe, with a dark complexion and curled hair, whether they are Papawans or Andamans, is a question

which no one could answer, except a person who had seen them both. Some persons have been brought from the Andamans to Penang, and no doubt has ever been entertained, but they are unquestionably of African extraction. I had occasion to see at Nancowry a man from Mozambique, who had seen several times persons from the Andamans, and who assured me that they were people belonging to the same race as himself. It is not to be supposed that the above mentioned person could have confounded two races so distinct as are the Africans and the Papawans. The hair of the last mentioned race grows in small tufts, each having a spiral twist. The forehead rises higher; the nose is more projecting from the face; the upper lip is longer; the lower projects forward from the lower jaw to such an extent, that the chin forms as it were no part of the face. This description given by Sir Everard Home, forms a striking mark of the dissimilarity between the two races.

The Little Nicobar has a beautiful anchorage; the Steamer *Ganges* anchored opposite to a sandy beach, close to Pulo Beloo, at a short distance from the sea-shore. There is between the hills a beautiful valley, irrigated by a small river running from the south to the north; at the mouth of that river is a cave, in which numbers of the *Collocalia fuciphaga* build their nests: the bottom of the cave is filled several feet deep with guano. Coal has been found towards the northern point of the island; but it appears that the product would not pay the expenses of working it. The hills, which cover the interior of the island, may be estimated from one thousand to twelve hundred feet high. The sea-slugs called *trepan*, which is such a delicacy for the Chinese, abound in the harbour.

The beauty of the harbour, the safety of the anchorage, and the fertility of the soil, induced the Danish Government to choose this island for their head-quarters. The Steamer *Ganges*, which was bought for the use of the new colony, went in December last to Penang, in order to procure coolies; of the forty Chinamen taken on board, a part of them were unfortunately opium smokers; the consequence was, that when the supply of that drug which they had brought from Penang, was exhausted, being unable to procure any at Nicobar, they had no strength to go on with their work: after lingering for sometime, they fell victims to the deadly effect of that most pernicious habit. The remainder of the Chinamen have been employed in clearing

a place for the stores, and making roads; they have planted samples of sugar-cane, coffee, nutmegs, &c. It appears that the luxuriant growth of these plants exceeds the planter's expectation.

I entertain very little doubt, that the Danes will finally succeed in colonizing the Nicobar Islands; but great patience is required, and much money is to be expended for clearing the land. The fever, which attacks the natives, and particularly foreigners trading thereto, especially when they sleep on shore, is to be no doubt attributed partly to the dense thick forest covering the ground. Of the four French Missionaries who lived at Teressa, one of them died of fever soon after his arrival; a second one, after having been laid up with the same disease for more than a year, breathed his last at Mergui. The two surviving are still lingering under the same complaint, although they have left Teressa almost two years since. The natives of Car-Nicobar, when attacked with fever, rub themselves all over before a fire with hogs' lard. I do not know how far this remedy, which affords relief to those Islanders, would succeed with foreigners.

Should the Danish Government wish to go on with the colony, the best plan in my humble opinion would be, to employ Malays or Siamese to clear the forest; they are the people most fit for that purpose; the Chinese are most certainly the best cultivators amongst the Asiatics, but not being accustomed to the clearing of jungle, their work in that line would not compensate for the high salary which they receive. They, being accustomed to live on a good and abundant food, would certainly prove a heavy burden on a new settlement, such as the Nicobar, where provisions are, with so great a difficulty, to be had. The planters of Penang, having been annoyed by the importunities of the Chinese labourers, who are never satisfied with their present condition, have partly employed labourers from the Coromandel Coast; these coolies are a hard-working people, receive low wages, and are not impertinent towards their employers as the Chinese commonly are. It would be very easy for the Danish Government to procure labourers from the Coromandel Coast: rice and salt-fish being their food, they would be a lesser burden to the colony. Should Government take a couple of hundred Malays about the end of October, they would be able to cut down a considerable extent of the forest before the end of January: then their services might be dispensed with. In March or April fire could be set to the

wood, then fully dried up; this being done, the planting could commence. There is very little doubt, but the clearing of the jungle will put an effectual stop to the Nicobar fever. When the English took Arracan from the Burmese, that place was for some years called the grave of the troops; but the jungle having been cleared up to a considerable distance from the station, it is at present as healthy a place as any station in Bengal.

Province Wellesley, on the western coast of the Malayan Peninsula, was so unhealthy twenty years ago, that a European would not venture in the interior without being almost certain of catching the jungly fever; but the province having been in part cleared of jungle, it is considered by Europeans to be as healthy as Penang Island.

To colonize the Nicobars, a good manager is absolutely necessary, and much money must be expended at the commencement, and as all depends on the beginning, so the Government should be prepared to supply the settlement with means adequate to the undertaking. Should the establishment be properly managed at first, there is no doubt but the Malays and Chinese would go and settle there with their families, and cultivate the ground on their own account, as they do in English settlements; but on the contrary, were the Danish Government to go on slowly to the work, then the present settlement will be a failure, as was their first one at Nancowry. Nothing is to be expected from the natives; they are too lazy; they will never work except by compulsion.

The Nicobarians are averse to Europeans settling in their islands; this I heard from the most respectable of the Islanders, and but lately they gave a proof of it by making an attempt on the Government establishment. The natives being without courage, and not having among them a person who could succeed in forming them into one compact body and direct their united efforts, little fear is to be entertained about their future desultory attacks.

The sight of the south-west entrance to Nancowry harbour, affords a magnificent spectacle, and inspires the soul with emotion and pleasure. The passage which is about one hundred feet wide, has on each side a bare and rugged rock, having in the centre an opening much resembling the side gates of a citadel; these rocks lie adjacent to the hills rising from two to three hundred feet above the level of the sea, and are covered with a fine and ever-green vegetation; on entering the harbour.

which appears as a large basin, the eye meets with some hamlets surrounded by cocoanut and betelnut trees; many of the houses are built like the Malay huts, and some have the shape of bee-hives. The whole circumference of the harbour is lined with hills varying in shape, size, and height: some rising in the form of inclined planes, some towering perpendicularly; and some having several escarpments; these hills, from four to five hundred feet high, are covered with luxuriant vegetation. In vain the eye seeks for cultivated ground to embellish the scenery; nothing is to be seen but the savage grandeur of a vigorous vegetation, which characterises this part of the world. The harbour communicates with the sea by another entrance towards the east, which is the general passage for vessels to get in: there stands a village called Malaca; when vessels anchor close to it, both of the passages may be seen.

The inhabitants of this village, which has ten or twelve houses, are far from making a favourable impression on the visitor. By their features the Nancowry people resemble the Malays so much, that they appear to have some of the Malay blood in their veins; and there is no doubt, that if they rightly deserve to be considered as the wickedest amongst all the inhabitants of the group, it is owing chiefly to their frequent intercourse with the Malays. Some days previous to my arrival at Malaca, a young East Indian, William Goldsmith, who had resided there several years, died in that village. On enquiring about the particulars of his death, I was far from being satisfied with their contradictory, and on all respects, unsatisfactory answers. This young man must have known a great deal about the doings of the natives: it is not therefore improbable that his death had been hastened by the suspicious Islanders who feared he might make known their mischievous deeds. In the same village an African Christian, named John, who speaks tolerable Portuguese, and was employed as gunner by the Danes when they were in that island, came on board dressed with a miserable rag which the natives wear around their loins, he had for a neckcloth a fine pantaloon, which he received a few days before from one of the Danish officers. I put several questions to him concerning the inhabitants, but in vain; he only told me that the natives were very good, with the exception of the inhabitants of the False harbour.

The first Danish settlement was at Karmorta, opposite to the village of Malaca; the remains of a few brick houses may be seen still on a

rising ground. I do not think that the spot was well chosen for an European settlement, the harbour being surrounded on every side by hills with the exception of the two entrances. This site must have proved unhealthy to the settlers; the low ground is very sandy, and the soil appears to be inferior to that of Nicobar.

Teressa Island appears to be ill adapted to be the head-quarters of a colony; the south of the island being an open place without a harbour, is too much exposed to be a safe anchorage, the surf is tremendous, and the only place for landing, is a small passage amongst sweeps. The breakers in the NE. monsoon are also terrific. The northern part of the island is partly protected by Bombaka, a small island, distant two miles from Teressa, the hills of which rise suddenly from the beach; but that side being exposed to an easterly gale, the anchorage is not safe. The low ground of Teressa is very sandy, and although the hills are composed of red clay, they are covered in part by a coarse grass called *Lalan*, and the vegetation does not appear to be so strong as in some other islands. *Lackshee* is the largest village in the island: it is situated towards the south, and contains seventeen huts, numbering one hundred and four persons. It is in that village that the French Missionaries dwelt, living in a native hut. The Islanders would not allow them to build a house, although they had brought the materials from Penang; being under the ridiculous impression, that if a house were built different from theirs, they would all inevitably die. The Car-Nicobarians have not those prejudices, having allowed the Missionaries to build a house in 1836 in any shape they thought proper.

The Missionaries entertained at first great hopes of converting the natives; the Islanders visited their houses frequently, and though they did not appear to take much interest in their instructions, it was thought that this might be attributed rather to the unsteadiness of their character than to any determined aversion to their becoming Christians.

The priests on becoming better acquainted with their character, found that the trifles they had brought with them to the Nicobars, were partly the cause of the seeming affection shewn to them at the beginning. A school was opened by the Missionaries; as children do what they please, and parents having no controul over them, the school was attended only by a few, and that for a very short time, so that not a single boy could derive any benefit from it.

The Jesuits, about two hundred years ago, were the first who brought to those Islanders, the light of the Gospel: their exertions were crowned with success at Car-Nicobar, but these Missionaries being anxious to give the same benefit to the other islands, went thither on that purpose. Their zeal was rewarded with the crown of martyrdom. The neophytes being left to themselves, fell again into their former paganism.

In the beginning of this century, an Italian clergyman was sent from Rangoon to Car-Nicobar, his zeal, charity, and simplicity of manner in his living, gained him the hearts of the natives; several of them were baptized; and there is very little doubt, that the whole island would have been converted, had he not caught the fever, in consequence of which, he had to return to Rangoon, where he died shortly after his arrival.

In 1835, two French clergymen were sent by the Bishop of the Straits to the same island. The natives were shy at first, but after a few days of intercourse, they shewed a more friendly disposition, and allowed them to build a house. The Missionaries found that their frequent communication with foreigners was far from having improved their manners. They were no more that simple, innocent, and harmless people as they were formerly represented to be. When the natives became more acquainted with the missionaries, they paid them frequent visits; bringing with them trifling presents, such as yams, fowls, &c., some of them being anxious to learn the Christian religion, went every evening to their house to be instructed: after a few months' residence there, the priest had gained so much the affection of the people, that their house was crowded every day; and they were permitted to visit all the parts of the island without excepting even their inland establishments, where they keep their most valuable articles: a privilege which had never hitherto been granted to any foreigner. Every thing went on prosperously, until the arrival of a Cholia vessel, whose *Nakoda*, by misrepresenting the character of the priests, withdrew from them the confidence of the natives. He told them, that the Missionaries were English spies sent there, for the purpose of enquiring into the produce of the country, and that in consequence of the information furnished by them, that Government would soon take possession of their islands. The Nicobarians having given credit to this tale, would hold no more communication with them nor sell them any provisions: two of the natives who

continued faithful to the Missionaries, told them that the people were so exasperated against them on account of these false reports, that if they remained any longer, there was no doubt, but they would become victims to their rage. As the Missionaries could not succeed in convincing the Islanders of the untruth of the report, and seeing that any further stay among them was useless, they quitted the place, having remained in the island about a year. It is impossible to form an adequate idea of the hardships which the Missionaries underwent during their stay in the Nicobar Island. They were deprived of every comfort of life; their food frequently consisted of nothing but cocoanuts and yams. The Rev. Mr. Lacrampe, who spent the SW. monsoon at Chowry, had no rice to eat during his stay; and had it not been for a native who brought him one yam every other day, and which he was obliged to share with a servant boy, he would have starved. This gentleman being attacked with fever, cocoanut-water was the only drink he could procure to quench his burning thirst. The Rev. Messrs. Chopard and Borie, soon after their arrival, were taken ill at Teressa, and so seriously, that they could not render each other assistance: both were lying on mats in the same place, without remedy, and receiving no assistance from the natives, but the hand of Him who had guided their steps in that foreign land, supported them amidst such trying afflictions. At last Mr. Borie, though of a strong constitution, fell a victim to repeated attacks of fever. On that very day, in the evening, Revd. Mr. Chopard was so very ill, that he was not at first aware of the death of his companion. On the following morning, having recovered his senses, he then only found that his friend was but a corpse lying by his side. On the same evening the natives removed the mortal remains to the grave they had prepared: and he, though scarcely able to creep along, attended the funeral. A worldly-minded person might mistake this pure zeal of the missionaries for blind fanaticism; but their conduct cannot but be admired and praised, when we consider and reflect on the fact, that these missionaries were led by no possible earthly motives, but guided solely by the earnest desire of making known the saving truths of the Gospel to their fellow-creatures. Nothing but a belief grounded on the strongest evidence, and deeply rooted in their souls would have led them to the field of their labours, and supported them through the severest trials.

Chowry Island, seen from the east, presents a rugged and abrupt rock, resembling the walls of a citadel or old castle. The other part of the island is flat. Although cocoanut trees grow well there, the quantity is not sufficient for the support of the inhabitants; in consequence of which, many are obliged to proceed to other islands. The emigrants being generally men, it follows, that the female sex are more numerous; I suppose this is the cause why the privilege of having several wives is allowed in that island. No fresh water is to be had at Chowry; the inhabitants therefore have no other drink but cocoanut-water. Vessels or boats touch seldom at Chowry, because there is no safe place of anchorage; in consequence of which the natives are the poorest among the Nicobarians; and when they have to buy or sell any articles, they go to the other islands where the vessels are lying.

In all the group of the Nicobars are found, more or less, birds' nests, trepan, ambergris, and tortoise-shells. The first vessel that touches there, when the SW. monsoon is over, might make good bargains with the natives, provided the purchasers be well acquainted with the quality of the articles brought to them.

The *Collocalia fuciphaga* is smaller than the common Swallow, brown above, and whitish below. The nest is a whitish gelatinous substance, arranged in layers and secreted by the salivary glands of that species of Swift. These birds, common in the Archipelago of Mergui, the Nicobars, &c. build their nests in the cavity of the rocks, where it is most difficult and perilous to have access. The nests are of six qualities; the first, of a fine whitish colour, is obtained by taking the nest before the Swift has layed its eggs. This quality is sold at Penang from forty to fifty dollars the katee. The second quality of a brownish colour, is obtained by taking the nest when the bird has layed her eggs. It is sold at Penang at from twenty to thirty dollars the katee. The third quality is of a dark colour, mixed with blood and feathers, it is obtained by taking the nest when the young birds have flown; the price of this sort is very low. The Chinese say, that when the nest is taken before it is completed, the Swift makes another but of an inferior quality: and it appears that the bird exhausts itself in building the second; the next being spotted with blood. The manner in which the Chinese prepare the nest is to steep it in water during one night; then with great trouble they clean it; this being done, they boil it in water to which

they have added some sugarcandy, till the whole forms a jelly: one nest prepared in this manner, is sufficient for one person.

Birds' nests being very dear, the wealthy Chinamen only can enjoy this delicacy. The rich opium smokers take in the morning a cup of it, for the purpose of refreshing and strengthening their debilitated frames. Persons attacked by consumption, are advised by the Chinese physicians to take these nests; they prescribe the same to those who are reduced by a protracted illness; and I have seen several persons, who, having made use of this remedy, declared that they found a temporary relief from this refreshing and nourishing food.

Formerly, both Malays and Burmese, procured at the Andamans a considerable quantity of these nests: collecting them themselves, or receiving them from the Islanders in exchange for their tobacco, &c. I was told by an old Caffrey, who is still living, that when young he had been several times at the Andamans; that the inhabitants were then a harmless people; that they brought on board, trepan, birds' nests, &c.; taking in exchange several articles. The above person attributed the change in their manners to the misconduct of some Malays and Burmese, who taking advantage of the time in which the natives were on board their vessels, tied them up and carried them off as slaves. It is a fact, that several persons at different times have been brought to Rangoon as well as to Penang. How could it be expected that the natives after such treatment, would keep the least intercourse with foreigners. At present their antipathy to strangers has risen to such a degree, that it is most dangerous to approach their shores. It is said, that the Andaman people are Cannibals; but the assertion is hitherto destitute of unquestionable proof: and it would appear rather strange, that a people, who are reported to have been harmless forty or fifty years ago, could have fallen into such a state of barbarism in so short a time: be that as it may, it is certain, that peaceful persons who have called to their island, to procure a supply of water, have been murdered by the natives without provocation.

Ambergris is found in all the group of the Nicobars; and some years in such quantities, that this article is scarcely of any value in these islands. In the various islands I visited, the natives brought me ambergris for sale; but its having been mixed with the wax of a small bee, which establishes itself in the trunk of decayed trees, it was of a very inferior

quality. The genuine amber is sold very dear at Penang. The Chinese and Burmese use it for medicinal purposes.

The trepan, or bichoo-de-mar, is a leech-like animal, from fifteen to twenty inches long, to four or five inches broad. Some are of a reddish-brown, and some of a dark-brown colour. These animals lay in the sand or coral rocks, without shewing any appearance of animation. The Malays have two ways to catch them; first by spearing, and second when the water is not too deep, by diving and taking them with their hands. The Malays are, I think, the only people who prepare the trepan. They start for the Nicobar Islands in November and December, and remain there till the end of April. The way of preparing these leeches for the market, is to boil and dry them in the sun or at the fire: they are then packed up with lime, brought to Penang, and sold to the Chinamen, who are the only people, I think, fond of that *delicacy*. The price varies according to the quality; some trepans are sold at the rate of thirty dollars per pecul, some at a lower price. The Chinese alone have the skill to find out a difference between the various kinds of trepans. A Malay boat made last year, fifteen hundred dollars by merely collecting trepans.

Having been in the different islands for a short period of time only, I could not ascertain what are the different species of trees growing there, but judging by those I saw, I think they are, with a few exceptions, of the same species as those growing at Penang; the dammer tree particularly, is very common. The overseer employed by the Danes at Little Nicobar, says, that teak is found on the island, but I am inclined to believe that it is a mistake.

The soil on the sea-shore of the Nicobars is sand, coral, lime, and vegetable mould, more or less thick. The hills are red clay, as the Penang hills: the rocks are limestone, sandstone, clay and slate. As rain seldom falls in the months of December, January, February, and March, I do not know how far the plantation of spices would succeed.

When at Nicobar, I collected different species of birds which were sent to the Calcutta museum. I saw at Katchall and at Little Nicobar monkies of the species *Macacus cynomolgus*. The natives told me that several species of snakes were found in the islands, some being very venomous. The *boa constrictor* is found also in the islands, particularly at Teressa.

The shells which I collected were the following: ammonites virginea, conus generalis, cypræa, exenthama, cassidaria chiasphora, ceritheum, murx tenuispina, pteroceras scorpio, anodon dipsus, cardita caliculata.

Before concluding this notice, I beg to return my most sincere thanks to Captain R. Ashland, commanding the Danish Steamer *Ganges*, for having afforded me, with the utmost kindness, the means of visiting several of the islands above-mentioned, as also for the unceasing kindness shewed to me when on board of his vessel, both by him and his officers. I was seventeen days in the group, and I am indebted for the foregoing detailed accounts, partly to the natives themselves, but chiefly to the Reverend Mr. Lacrampe, who accompanied me to the Nicobar Islands. As this clergyman had previously resided for more than one year on these islands, and was tolerably well acquainted with the language of the natives, I have unhesitatingly relied on the information he so readily gave me.

It is as well to add, that in mentioning the harbours, their entrance, &c., I may have mistaken with regard to their exact position, but I beg the reader to bear in mind, that I am not a seaman, and therefore no one can expect from me that exactness in such matters, which can be furnished but by persons brought up to that profession, and who are supplied with the requisite instruments.

Small Vocabulary of the Nancowry Language.

Man,	Inconhay.	Chin,	Inknan.
Young man,	Maial.	Beard,	Boyalkiah.
Woman,	Ungcan.	Neck,	Kolalah.
Girl,	Uiah,	Belly,	Uhian.
Wife,	Incam.	Hand,	Kanathoi.
Head,	Koi.	Thigh,	Bhoolo.
Hair,	Inkoi.	Leg,	Anhnan.
Ear,	Nan.	Foot,	Huphala.
Nose,	Moi.	Sea,	Kahmala.
Forchead,	Lail.	Water,	Rak.
Eyes,	Olmat.	Rice,	Aroos.
Lips,	Mahnoey.	Cocoanut,	Gnhuat.
Teeth,	Kanap.	Ambergris,	Kampei.
Tongue,	Kealatat.	Birds' nest,	Akai.

Moon,	Khaha.	Eat,	Hookgnok.
Sun,	Han.	Drink,	Phim.
Star,	Lomalay.	Go,	Ahochoo.
House,	Hnee.	Come,	Kathara.
Fire,	Hahoha.		

1.	Hing.	4.	Fuan.	7.	Hakiat.	10.	Lam.
2.	Hahoo.	5.	Thanin.	8.	Infuan.	20.	Hingian.
3.	Looha.	6.	Thafool.	9.	Inhatta.	30.	Loohagian.

Notes on the Fauna of the Nicobar Islands. *By* E. Blyth, *Curator of the Museum of the Asiatic Society.*

The Vertebrated Fauna of the Nicobars, to judge from the collection with which Mr. Barbe has favoured the Society, and also from a nearly parallel series of specimens collected and presented to the Society by Capt. Lewis, would seem to be remarkable for the paucity of terrene species; while a large proportion of such as do occur are apparently peculiar to the locality.

Mammalia.

Of this class, I have examined four species only, of which three are Bats.

Macacus cynomolgus: which is also an inhabitant of the Tenasserim Provinces and Malayan peninsula, but in Arracan is represented by the allied *M. carbonarius*. I have been presented with two living specimens from the Island of Timor, which do not appear to differ from those of Malacca; the species being everywhere subject to some individual variation.

Pteropus edulis: *Pt. javanicus*, Horsf., &c. &c. Three specimens are alike remarkable for having the throat and front of the neck black, the head blackish, the nape dull reddish-brown, the back shining black, flanks and vent dull black, and the rest of the under-parts dull reddish-brown, much paler in the centre.

Cynopterus marginatus, (B. Ham.) Inhabits India generally, as also the countries eastward of the Bay of Bengal to Malacca, and the great eastern archipelago.

Hipposideros murinus, (Elliot): vide *J. A. S.* XIII, 489. Identical with specimens from Southern India, and from the Malayan peninsula.

In addition to the above, Capt. Lewis informed me of a large Monkey, evidently a *Presbytis* (vel *Semnopithecus*) from his description, of which he vainly attempted to obtain specimens, from its remarkable wildness; also of a large Squirrel, distinct from any in the Society's Museum, and therefore probably new, considering the locality.

Capt. Lewis likewise obtained, in the immediate vicinity of the Nicobars, an example of *Delphinorhynchus rostratus*, F. Cuv., as identified from its skull which he has presented to the Society, and which entirely accords with that of a specimen captured in the Red Sea.

Sus —— The Nicobarian Pigs appear to have been derived from the Chinese domestic species, turned loose upon some of the islands.*

It can scarcely be doubted, however, that several additional species of mammalia remain to be discovered, as particularly Bats, with probably more Squirrels, and at least two or three species of small *Carnivora*, and perhaps *Insectivora*.

Aves.

Palæornis caniceps, nobis, ante pp. 23, 51. Capt. Lewis obtained a living specimen of this bird, with the wings and tail mutilated by its native captor. Dr. Cantor has another and very fine specimen, evidently a female, with black beak, from the Malayan peninsula.

P. erythrogenys, nobis, ante p. 23. Specimens of this bird were procured both by Mr. Barbe and by Capt. Lewis; and a living male was given by the latter gentleman to Mr. Halfhyde, of the Preventive service, who, when it died, presented it to the Society. This individual was in far more beautiful plumage than the specimens previously examined: it measured eighteen inches and a half in length, of which the middle tail-feathers were ten and a half; expanse of wings twenty-two inches and a half; and closed wing seven inches and five-eighths: irides dull greyish. The cheeks and ear-coverts, continued forward to the beak,

* It may be here remarked, that Capt. Lewis has himself turned a pair of *Cervus axis* loose, in a locality where they are likely to propagate.

arc of a beautifully bright cherry-red, devoid of the lake or "peach-blossom" tinge prevailing on the same parts of *P. malaccensis*, and which, in the latter species, is continued round the nape : the crown also is not of the deep emerald-green of that of *P. malaccensis ;* the occiput and nape incline to light straw-yellow ; and there is a well defined black line from the nostril to the eye : all which combine with its superior size, and other minutiæ that might be pointed out, as the absence of red above the ear-coverts, to distinguish it from *P. malaccensis*. Indeed, it holds much the same relationship towards that species, which *P. Alexandri* does towards *P. torquatus ;* and *P. caniceps* stands in the same position towards *P. pondicerianus ; P. schisticeps*, also, towards *P. cyanocephalus.—P. erythrogenys*, so far as we are yet aware, is peculiar to the Nicobar Islands, where it occurs abundantly.

Bulaca seloputo, (Horsfield) : *Strix pagodarum*, Tem. Capt. Lewis informed me of a very beautiful Owl which he obtained, but the specimen was lost through the carelessness of a servant : he could not recognise the species among the fine collection of Owls in the Society's Museum, but identified it positively from a Malayan specimen belonging to Dr. Cantor. The present species has been much confounded with its Indian representative ; which latter has been referred, not very satisfactorily, to *Strix sinensis*, Lath. A very large white Eagle was also shot by Capt. Lewis, but he could not succeed in penetrating the very dense jungle into which it fell : this was probably *Blagrus dimidiatus*, (Raffles.)

Todiramphus occipitalis, nobis, ante pp. 23, 51. Peculiar, so far as has been yet observed, to the Nicobars.

T. collaris, (Scopoli and Swainson) : *Alcedo chlorocephala*, Gmelin. Nicobarian specimens of this bird are remarkably brilliant, with much less of the green tinge than usual upon the crown and back.

Merops philippinensis. Found also throughout India, and in the Malayan peninsula and archipelago.

Collocalia fuciphaga, (Thunberg), vide p. 22, ante.

Gracula javanensis, vide p. 31, ante. Inhabits the southern Islands only.

Sturnia erythropygia, nobis, ante p. 34. Hitherto observed only upon the Islands.

Calornis affinis, A. Hay, ante p. 36. Upon the average, this bird is less brightly glossed than *C. cantor*, of the Malayan peninsula and archi-

pelago. It was observed by Capt. Lewis in the central and southern Islands.

Nectarinia pectoralis, Horsfield: *N. eximia*, Temminck (nec Horsfield). Inhabits also the Malayan peninsula and Java, but in the Tenasserim provinces and in Arracan is represented by the allied *N. flammaxillaris*, nobis.

Zosterops palpebrosus, (Tem): *Sylvia annulosa*, var. A. Swainson. This species inhabits the hilly parts of India, from the Himalaya to Ceylon inclusive, and also those of Arracan and Tenasserim: but I have never seen it from the Malayan peninsula, and it is represented in Java and the Philippines by *Z. flavus*, the *Dicæum flavum*, Horsfield. The specimen described as *Z. nicobaricus*, *J. A. S.* XIV, 563, would seem to be merely the young; though I have never seen an Indian specimen in corresponding plumage. The Society has, however, subsequently received Nicobarian specimens in the ordinary dress of *Z. palpebrosus*.

Oriolus macrourus, nobis, ante p. 46. A very distinct species, observed only in the central Islands. I may here remark, that since my Synopsis of this genus was written *(loc. cit.)*, I have discovered that females of *O. melanocephalus* very commonly assume the plumage which is generally thought to be characteristic of the adult male; and I greatly suspect that the same obtains in the various other species of Oriole.

Hypsipetes virescens, nobis, vide p. 51, ante. Inhabits the central Islands.

Geocichla innotota, nobis, *MS.* (described in the sequel to my 'Notices and Descriptions of New Birds'). Both Mr. Barbe and Capt. Lewis procured what I infer to be a female of this well marked species; and Dr. Cantor's Malayan collection contains what I incline to regard as the male. The colouring is considerably more intense than in *G. citrina*, and there is no white upon the wing-coverts; the presumed female only has a white throat, and the scapularies and interscapularies are olivaceous.

Dicrurus balicassius, (Lin.) A specimen of this common Malayan species was obtained at sea, by Capt. Lewis, when nearing one of the Islands.

Tchitrea —— *?* A species of Paradise Flycatcher, or *Shah Bulboul* of the natives of India, was observed but not obtained by Capt. Lewis.

Myiagra cærulea, (Vieillot). Common.

Treron chloroptera, nobis, XIV, 853. A very distinct species, hitherto only observed upon the southern Islands.

Carpophaga sylvatica, (Tickell). Nicobarian specimens seem invariably to differ from those obtained throughout the eastern coast of the Bay of Bengal (from Arracan to the Straits), and also from Java, Sylhet, Assam, &c., all of which are quite similar, in the green of of the upper-parts being wholly unmixed with bronze, and the ash-grey of the head, neck, and under-parts having no tinge whatever of vinaceous; the primaries also are devoid of the grey tinge; and the lower tail-coverts are much less deeply tinctured with dark vinaceous. Hence the *ensemble*, when several specimens of each are examined together, is conspicuously different. This species occurs in the central group of Islands.

C. myristicivora, (Scopoli): *Columba alba*, Gm.: *C. littoralis*, Tem. Both this and the preceding species are very common.

Calœnas nicobarica. Found also in the Andaman and Cocos Isles, in the Mergui archipelago (according to Helfer), and in the Malayan peninsula. Two young ones procured by Capt. Lewis have the tail greenglossed black, whereas in adults the tail is pure white. The elongated nuchal hackles do not exist in the garb of juvenility.

Chalcophaps indicus. This differs from the Indian race in the deeper ash-colour of the nape, and bluer vinaceous hue of the under-parts; while the bands on the rump (so conspicuous in the Indian bird, and also in its Australian near ally, *Ch. chrysochloros.)* are very indistinct. It abounds in the central Islands.

Macropygia rufipennis, nobis, *n. s.* Most closely allied to *M. phasianella* of Australia, but rather smaller in all its proportions, and best distinguished by the uniform bright rufous hue of the entire under-surface of the wings, which occupies the whole of each feather except towards its tip. The primaries are also externally somewhat broadly margined with the same. There is really no other difference: but another species, *M. amboinensis*, of Java and the Moluccas, differs only from *M. phasianella* in its much inferior size. Specimens of all three are in the Society's Museum, and there can be no doubt of their distinctness. I have also a living specimen of *M. phasianella*, caught at sea about sixty miles from the Australian coast. It is kept in an aviary with a variety of other birds, and prefers plantain to any other food: so eager is it for this fruit, that of a morning it will alight on a bunch of plantains as the latter is carried into the aviary, and when the

plantains are hung up, it combats with the different species of Hurrials *(Treron)* and other birds, in a singular manner, to obtain undisturbed possession of the fruit. Its manner is to hover round them, and not exactly to strike with its feet, but to push with them the intruder off its perch, and this it will sometimes repeat two or three times in succession without alighting. It never descends to the ground, except to feed on fruit that may be lying there; yet, though so fond of this aliment, it was fed, when on board-ship, exclusively on maize, and in default of fruit will thrive on rice and other grain. This bird is chiefly active in the morning and evening, and scarcely moves from its perch during the day. Its coo is hoarse, deep, and subdued, a sort of croaking sound, only audible when very near, and resembling 'o-o-o-o-ah' repeated several times successively.* *M. rufipennis* was observed only in the Southern Nicobars.

Turtur suratensis, (Lath) : *Columba tigrina*, Temminck. Common to India and the Malayan peninsula and archipelago.

Megapodius nicobariensis, nobis, ante p. 52. Of this very interesting bird, Capt. Lewis obtained the egg and chick, and Mr. Barbe an adult pair, with also two eggs, which latter are noticed in my description of the species. That procured by Capt. Lewis was uniformly tinged with reddish-brown, which still further bears out Mr. Gould's description of *M. tumulus* of Northern Australia, the eggs of which he describes to vary somewhat in hue, according to the soil in which they are deposited.†

Demigretta concolor, nobis, *n. s.* This Demi-Egret was long ago forwarded from Arracan by Captains Phayre and Abbott, and I am assured that it also occurs in Assam. In the central Nicobars it would seem to be not uncommon. From *D. asha*, (Sykes,) it is readily distinguished by its shorter legs; the tarse measuring but three inches instead of three and three-quarters: wing eleven inches, or eleven and a half, in adults; about an inch shorter in the young: bill to forehead three inches and a half, and to gape four and a quarter: middle toe and

* This bird is since dead; its plantain diet by no means agreeing with it so well as the maize on which it was kept formerly. As for its mode of fighting, I lately saw a pair of Doves (*Turtur suratensis*) on the ground, which repeatedly flew up and attacked each other much in the same way.

† Mr. Barbe informs me that this bird is common on all the Islands; but that he never saw it perch, as Mr. Gould represents *M. tumulus* to do, in the back-ground of his plate. The pair he shot were together, upon a hillock, and upon his shooting one, the other did not make off, upon which he killed it with his second barrel.

claws two inches and three eighths, the claws short and much curved. Colour uniform dark slaty throughout; some specimens having a white line on the chin and throat. Adults have narrow lengthened plumes on the back and breast, similar to those of *Ardea cinerea:* the occipital plumes also are somewhat lengthened, as in Herons generally; but I have seen no defined occipital crest, and doubt its ever possessing one. Beak mingled dusky and dull yellowish; and the legs appear to have been olive-green.

Nycticorax griseus, (Lin.): *Ardea nycticorax*, L.

Strepsilas interpres, (Lin.) Common along the coasts of the Bay of Bengal; and the Society has received a specimen from the Mauritius. One of the most universally distributed of birds.

Totanus hypoleucos, (Lin.) Excessively numerous in the Bengal Soonderbuns; and the Society has also received it from Chusan. Of very general distribution throughout Europe and Asia.

Thalasseus bengalensis, (Lesson). Nearly allied to *Sterna velox* and *St. affinis* of Ruppell (nec *St. affinis*, Horsf.), to which it would seem intermediate. *St. cristata*, Sw. (nec Stephens), is also closely allied, but remarkable for its very pale colour. From the European *Th. Boysii*, (Pen.), which it also greatly resembles, this species differs in having the bill wholly yellow, and the tail uniform grey with the back. Another allied species, which was procured by the late Dr. Helfer in the Tenasserim Provinces, agrees with the description of *Sterna poliocerca*, Gould, and is perhaps the *St. cristata* of Stephens. *Th. bengalensis* is not uncommon in the Bay of Bengal.

Sterna (?) melanauchen, Tem.: figured in Gould's 'Birds of Australia.' This species breeds abundantly in the Nicobars.

Another species common in the Bay, is the *Melanosterna anasthætus*, (Scopoli), v. *Sterna panaya*, Lath., *St. infuscata*, Licht., and *St. antarctica*, Lesson: and allied to this is a species which is perhaps *St. grisea* of Horsfield, and which was obtained by Prof. Behn, of the Danish expedition, as he was approaching the mouth of the Hoogly. If new, I am enabled by the politeness of that naturalist to subjoin the accompanying description of it.* *Anous tenuirostris*, (Tem.), is also a

* *Hydrochiledon grisea* (? Horsfield): *n. s.* ? *H. marginata*, nobis. Resembles *H. nigra* in winter plumage, except in being much larger, and in having the nape (surrounding the black of the occiput) pure silky white, as are also the entire under-

marine species of Tern, which I have obtained in the Bengal Soonderbuns.*

Phaëton æthereus. The only Tropic-bird, (or "Bo'sw'n-bird,") I have seen from the Bay of Bengal. *Ph. candidus* abounds near the Mauritius, and *Ph. phœnicurus* towards Australia.

Pelicanus philippensis. The smaller Indian Pelican, which seems to be the predominating species throughout the Malay countries.

It thus appears, that of thirty-two ascertained species of birds, procured either upon, or in the immediate vicinity of the Islands, (which number includes *Bulaca seloputo, Dicrurus balicassius*, and *Phaëton æthereus*,) as many as eight are peculiar to the locality,—so far, of course, as has been hitherto ascertained; for it is likely that most of them inhabit also the northern part of Sumatra, and perhaps the Andamans, and the province of Mergui and its vicinity. These eight comprise several remarkable and conspicuous species, and are as follow:—*Palæornis erythrogenys, Todiramphus occipitalis, Sturnia erythropygia, Oriolus macrourus, Hypsipetes virescens, Treron chloroptera, Macropygia rufipennis*, and *Megapodius nicobariensis.*

parts, including the sides of the breast: the mantle is also much paler, and the tail more deeply forked and differently coloured. Length, to end of middle tail-feathers, ten inches and a half, or to the outermost a foot; wing nine inches and a half; middle tail-feathers two and three-quarters; hill to gape one and seven-eighths; tarse three-quarters; middle toe and claw an inch; the webs of the toes more developed than in *H. nigra.* Bill reddish-dusky, redder towards base of lower mandible; the interior of the mouth apparently coral-orange; and legs, toes, and membranes, the same, with black claws. Colour above pale ashy, with sullied whitish margins to the scapularies and wing-coverts; a defined blackish band, half an inch broad, extends along the outside of the radius, bordering the upper-part of the wing anteriorly, as in the winter dress of *H. nigra:* crown and occiput black, embracing the orbital region; towards the forehead the feathers become gradually more deeply margined with white, and the forehead and entire under-parts are pure white, extending on the nape: the great alars are silvery-ash externally, except the first, which has its outer web, and half the breadth of its inner web, with the tip, black, tinged with ashy towards the tip and on the inner web; the extent of the dark ashy tip increases successively on the other primaries, the shorter of which have a narrow white border to their inner webs; while the secondaries are tipped externally with the same: the lesser coverts of the primaries, with the winglet, are mostly dusky: middle tail-feathers pale grey, with a whitish tip; the rest white on their inner webs, and successively darker till they become blackish on the outer: underneath the wings and tail appear margined externally with blackish-grey.

* The Society's specimen of this bird is not a very good one; and I can distinguish it neither from *A. melanops* nor *A. tencocapillus*, figured in Gould's 'Birds of Australia.'

Four others exist as varieties, more or less marked, of species met with elsewhere: viz. *Todiramphus collaris*, *Collocalia fuciphaga*, *Carpophaga sylvatica*, and *Chalcophaps indicus*.

Of those which are not peculiar to the Islands, twenty-one are known to occur in the Malayan peninsula (including *Palæornis caniceps* and *Geocichla innotata*, which were discovered in the two localities about simultaneously); and the remaining three inhabit Arracan, and probably Tenasserim—certainly as regards *Zosterops palpebrosus*, the others being *Calornis affinis*,* and *Demigretta concolor*. It is probable, indeed, that the whole twenty-four occur in the Malayan peninsula, with also some of the remaining eight, which appear to have been hitherto observed only on the Islands.

Of the species found likewise in India, the majority are more or less aquatic, belonging chiefly to the Zoology of the Bay and its vicinity: such is *Todiramphus collaris*, which abounds in the Bengal Soonderbuns, and along the whole eastern shore of the Bay, but is very rare on the Coromandel coast of the peninsula: but *Merops philippinensis*, *Zosterops palpebrosus*, *Myiagra cærulea*, *Chalcophaps indicus* (Ind. var.), *Turtur suratensis*, and even *Carpophaga sylvatica*,† are inland species, which are pretty generally diffused—though the last is much more common in the countries eastward (as Assam, Sylhet, Arracan, and Tenasserim). *Dicrurus balicassius* I have only seen from Nepal, it being the *Buchanga annectans* of Mr. Hodgson: and the remaining species included in the *Fauna Indica* are *Nycticorax griseus*, *Strepsilas interpres*, *Totanus hypoleucos*, *Thalasseus bengalensis*, *Phaëton æthereus*, and *Pelicanus philippensis*.

Hence, the data supplied by the highly interesting Ornithology of the Nicobars, (so far as we have yet the means of judging,) connect those islands with the Malayan Zoological province, as their position on the map would indicate: at the same time that they possess several peculiar and remarkable species, not hitherto discovered on the neighbouring lands.

* I have unfortunately retained for the Museum no Tenasserim specimens of *Calornis*, not having suspected the distinctness of *C. affinis* from *C. cantor*, until Lord A. Hay called my attention to the fact. *C. cantor* is common at Penang: and I may add that Mr. Barbe has just assured me that the Tenasserim species is *C. cantor*, and not *C. affinis*.

† The very small specimen mentioned in XIV, 857, proves to have been from the Neilgherries; but whether the race of Southern India is constantly thus diminutive, I am not yet aware.

Reptilia.

My materials for illustrating this class are rather scanty, although it would appear that the Nicobars possess many species, more especially of *Ophidia*.

Of the *Testudinata*, Mr. Barbe mentions two, recognizable portions of both of which were brought by Capt. Lewis: viz.—

Chelonia virgata; the edible Turtle of the Bay of Bengal: and

Ch. imbricata; the "Tortoise-shell" Turtle.

Of the *Sauria*, Capt. Lewis collected four species:

Monitor salvator, (Laurent): *Tupinambis bivittatus*, Kuhl; *Varanus bivittatus*, Dumeril and Bibron, *Hist. des Reptiles*, III, 486.

M. nebulosus, Gray: *Varanus nebulosus*, Dum. and Bibr., *Hist. Rept.* III, 483.

Both of these species inhabit the Malayan peninsula, and the first occurs abundantly in Lower Bengal. According to M. M. Dumeril and Bibron, the second also was sent from Bengal by M. Belanger; but I have never succeeded in obtaining an Indian specimen.

Calotes ophiomachus, (Merrem), Dum. and Bibr., *Hist. Rept.* IV, 482. This agrees sufficiently well with the description cited, save that the terminal four-fifths of the extremely long tail are white, instead of being annulated with white. I have no Indian specimen with which to compare it. If truly identical with the Indian reptile, the analogy of other Nicobarian species that occur also in India, renders it probable that it likewise inhabits the mainland forming the eastern shore of the Bay.*

C. mystaceus, Dum. and Bibr., *Hist. Rept.* IV, 408. The authors cited found this species upon a single specimen received from Burmah. One from the Nicobars accords with their description in all respects as regards structure; but the specific name does not apply. As far as can be judged from the example before me (preserved in spirit), the brilliant colours of which are now little more than indicated, it would seem that the entire head and throat, if not also several of the anterior dorsal spines, had been bright red, or the throat and lower jaw may perhaps have

* Referring to Merrem's figure, *Hist. Nat. des Rept.* III, 361, I cannot hesitate in considering the Nicobarian species to be the same.

been orange-red; while the body has evidently been vivid green: colours which probably depend partly on season, over and above the changeableness of hue which these reptiles exhibit at all seasons. The Nicobarian specimen is a male, in apparently the full brilliancy of its colouring indicative of the season of propagation, when no doubt it had the mishap to be secured.

Of the *Ophidia*, I can only enumerate three species.

Python (probably *P. Schneideri*). This was observed both by Mr. Barbe and Capt. Lewis; but I have seen no specimen.

Trigonocephalus Cantori, nobis, *n. s.* A typical member of this genus, having 169 abdominal plates, and 214 subcaudal scutellæ. Length of one specimen thirty inches. This large one was much injured when it was killed, and appears to have shrunk considerably from drying before it was put into spirit; from which causes it is not easy to describe its markings, but it seems to have been curiously blotched with red—which colour is not observable in a young specimen, fifteen inches and a half long. Both have a distinct lateral whitish line, bordering the abdominal scutæ and ceasing at the vent. Scales slightly imbricated. The young appears to have been dull olive-green above, mottled throughout with a double series of dusky blotches, semi-alternately disposed, with smaller spots and blotches on the sides, below which occurs the whitish lateral line: underparts greyish, from a freckling of minute dusky specks on a pale ground: on the head the markings tend more or less to be obsolete; but a whitish band proceeds backward from below the eye, and in the young is continued upwards almost at a right angle, and there is also a whitish patch posterior to the broad angle of the jaws, but unconnected with the lateral line of the body. The adult appears to be further variegated above, by scattered white spots composed of one, two, or rarely three scales each. The young is proportionally much more slender than the adult, and the triangularity of its head is less strongly marked.

Pelamydes platurus: having a much greater portion than usual of its tail banded; the bands diminishing to festoons anteriorly, until they are gradually lost.

The few *Reptilia* here enumerated, do not require any comment: three of them are marine species, viz. the two Turtles and the *Pelamydes*; but the former are, I believe, more nearly connected with the Islands by depositing their eggs upon the shores of them.

Pisces.

The marine Zoology of the Nicobars being properly that of the Bay of Bengal, it would scarcely be worth while here to supply a catalogue of well known inhabitants of the Bay, even if I possessed sufficient materials for the task. The freshwater species would possess more interest in the present instance: and of those I have not seen any, either vertebrate or invertebrate, or any land *Mollusca*. Capt. Lewis, on nearing the Islands, took a flying fish, which is *Exocœtus Commersoni;* and in a native hut he found a rudely prepared skin of *Balistes conspicillum*, Schn. *(B. bicolor*, Shaw*)*; he obtained also a fresh specimen of *B. rectangulus*, Schn. (v. *medinilla*, Quoy and Gaymard, and *fasciatus* of Shaw); also a beautiful wholly green Parrot-fish, allied to *Scarus gibbus*, Ruppell, Cuv. and Val. *Hist. Poiss.* XIV, 231, upon which Mr. Swainson founds his *Chlorurus*, 'History of Fishes, &c.' II, 227 (in Lardner's Cyclopædia). Capt. Lewis brought also a few specimens, chiefly small fry, from the myriads which, (like the *Scarus* last mentioned,) resort to the coral-beds: and among these the *Dascyllus aruanus*, (L.), Cuv. and Val. V, 325, would seem to be particularly common.

Lastly, he procured three species of saltwater Eels, which I have submitted to the inspection of Dr. M'Clelland, whose valuable labours on the very difficult group of apodal fishes require no eulogy from me; and that gentleman has favoured me with the following result of his examination of them:—

"Two of them are known species, I think; namely, *Dalophis geometrica*, (Ruppell), 'Fishes of Northern Africa,' pl. XXX, fig. 3, and *Cal. Journ. Nat. Hist.* V, 213,—and *Thærodontis reticulata*, M'Clelland, *C. J. N. H.*, V, 216, and pl. VII, fig. 1. The third is, I think, a new species, of which the following will be a sufficient description.

"*Thærodontis maculata*, M'Clelland. Two rows of distinct dark spots on either side, of an oval or somewhat oblong rounded form, and placed transversely, the rows extending from the head to the caudal extremity; also a row of more elongated spots on either side of the dorsal and anal fins, parallel with the rays.—Obs. This species bears some resemblance to *Dalophis tigrina*, v. *Muræna tigrina* of Ruppell, 'Fishes of N. Africa,' pl. XXX, fig. 2; but is more robust, and the spots are without an areola as in that species, and differently placed."

Invertebrata.

The only terrene species pertaining to an invertebrate class, which I have yet seen from the Nicobars, is the common *Scolopendra morsitans*. Of marine species, Capt. Lewis brought a *Loligo*, and various species of *Testacea* common in the Bay: also two species of *Asterias*, and specimens of *Fungia patella*, *Tubipora musica*, and a few other common corals. Of *Crustacea*, he preserved the claws of an extraordinarily large specimen of the common edible crab of India (*Lupa tranquebarica*), with examples of one of the species confounded under *Matuta lunaris*, and a small crab which accords perfectly with the figure and description of *Grapsillus dentatus*, Macleay, in Dr. A. Smith's 'Zoology of S. Africa;' also a *Pagurus*, and a fine specimen of *Palinurus ornatus*, and one of *Thenus orientalis*; with a small *Alpheus*, and one or two other minute *Palemonidæ* which are probably undescribed.

(To Mr. Barbe, the Society is further indebted for numerous specimens of mammalia, birds, &c. from Penang, and from the Tenasserim Province of Ye; also from the interior of the Tipperah hills. Among the Tenasserim specimens are a new Monkey *(Presbytis humeralis*, nobis), three new Squirrels (*Sciurus chrysonotus*, *Sc. melanotus* and *Sc. Barbei*, nobis,—the last being allied to *Sc. insignis*, *M'Clellandii*, and *trilineatus)*,—fine specimens of *Ampeliceps coronatus* (p. 32, *ante*), *Treron viridifrons* (XIV, 849), and various other species of much interest, including several that had only previously been obtained further to the southward, in the Malayan peninsula and Islands.)

Notes, chiefly Geological, from Koompta on the Western Coast (S. India) by the Devamunni and Nundi Cunnama Passes, Easterly to Cumbum, and thence Southerly to Chittoor; comprising a notice of the Diamond and Lead excavations of Buswapúr. *By Captain* Newbold.

Koompta is a sea-port on the coast of North Canara, in latitude N. 14° 26′, about 119 miles travelling distance, northerly from Mangalore. It stands at the mouth of a river of the same name; into which, from the shallowness of the narrow passage through the bar which blocks its embouchure, vessels of more than five corges burthen pass with difficulty. It is a depôt for the produce of Sircy, Yellopur, Hoobly, Darwar, and much of that part of the Balaghat.

Laterite here forms the surface stratum: the fundamental rocks are gneiss and hornblende schist.

The town itself contains about 400 houses, inhabited chiefly by Gouras and Halipaiks, Concani Brahmans, Hurkunters, Karins, Gaveets, and Mussulmans. The Haiga Brahmans live usually in *désams* scattered about the country.

The trade is chiefly in cotton, cotton cloths, rice, betelnut, dried cocoanut, cardamoms, black-pepper, sandal wood, coir-rope, salt, salt-fish, and cashew-nut.

Near this the river cuts through a bed of rich reddish alluvium, mingled with decayed vegetable matter, evidently a fluviatile deposit from the western Ghauts, and from the intervening low jungly country through which the river passes. This stratum covers an almost flat, highly cultivated plain, bounded on the north and south by long, low ranges of laterite hills, which have apparently formed the ancient banks of a great stream, which is now confined to a small space in its centre.

The cultivation is chiefly rice, sugarcane, betel, and cocoanut trees.

We landed at Oopenputtun, a salt depôt, about 4 miles from the foot of the Ghauts. Here the lateritic banks had closed in towards the river.

Laterite continues to the foot of the Devamunni pass, shaded by thick jungle.

The temperature of the water in the Oopenputtun river was 78° Fah., which was about the temperature of rain water. Temperature of air in

shade, at noon 79° 6′. Temperature of sea water on the coast at Koompta, 78° 5′.

The temperature of the soil, eighteen inches deep, was 78° 8′, which, according to Boussingault, would be the approximate mean temperature of the country. The temperature of most of the streams at the base of the Ghauts I found to be from 78° to 79°.

The month in which these observations were made was August.

The enormous quantity of 144 inches of water is supposed to fall in Lower Canara, from the end of May to the middle of October.

The Devamunni pass.—This pass in the western Ghauts, from Lower to Upper Canara, is about three and a half miles from bottom to top. The formation is much similar to that of the Hossalmucki pass, described in the paper 'On the Falls of Gairsuppa.' The stratification is similarly confused and contorted, and the dip irregular. At the base of the Ghaut, the strike is N. 20° E.; the dip 35° E. 20° S. Near the top of the Ghaut, the strike is N. 5° W., and dip nearly vertical, E. 5° N.

The vallies, at the bottom of the Ghaut, run W. 15° S. towards the sea, while those on the top have a SSE. direction; but the transverse vallies by which they are crossed and drained, run in a NE. direction, from the great watershed of the Ghauts to the table lands of the Balaghat, where the course of drainage is again modified by the physical contour of the country, but following generally the easterly slope of the peninsula to the Bay of Bengal, where the rivers disembogue.

The contour of the Western Ghauts at the top of this pass, as well as to the southward, is not that of an escarpment facing to the westward, and gently sloping off to the table lands of the Balaghat, as supposed by many, (a feature which is in fact confined to the more northerly portion of the ridge where the overlying trap affects their configuration,) but is a series of broken peaks, and ridges running generally in a S. by E. direction, and crossed by high transverse vallies, the descents of which are, however, shortened and most abrupt to the western coast, though rarely precipitous as at Gairsuppa. The height of these passes, on the line where the abrupt descent to the western coast commences, is rarely greater than that of the general level of the adjoining table lands from which they lead; and, in some cases, I am inclined to think, even lower.

The elevation of the top of the Manantoddy pass, determined barometrically by Mr. Babington, is 2,732½ feet above the sea. That of the Devamunni Ghaut, taken approximately by myself, (boiling point) 2,498 feet. This observation was taken at Manjugong, which is probably a little lower than the true anticlinal line. At the falls of Gairsuppa, a little below the summit of the Hossamucki pass, a similar observation made the elevation 2,235 feet.

The extreme height of the table land of Mysore, at Bangalore, reaches (roughly) 3,000 feet; at Seringapatam 2,412 feet; Colar 2,732½ feet; Mysore 2,695 feet; Baitmungalum 2,435 feet; Bellary 1,500 feet; Belgaum 2,500 feet; Poonah 2,500 feet. While the insulated granitic masses on these table lands frequently vie with those of the Ghauts, Sivagunga, in Mysore, is calculated at 4,600 feet, and Betrosson, at the slope of the Ghauts, 6,000 feet. These are only excelled (as far as known) by the Ghaut peaks of Bonasson, 7,000 feet, and that of Dodabetta 8,700 feet, and some others of the Neilgherry and Koonda cluster.

The passes of the eastern Ghauts, as might be expected, have a lower level than those in the western sierra. One of the highest is that of Naikenhairy, 1,907 feet. That of its neighbour, the Moogly pass, from Palamanair to Chittoor, is only 1,635½ feet. (The foregoing measurements are taken chiefly from Dr. Babington's and General Cullen's observations.)

The height of the Heggulla has not, as far as I am aware, been ascertained: it is probably of considerable elevation, since Periapatam, which stands on the western slopes of the Ghauts, two marches east of it, has an elevation of about 4,000 feet.

Munjguny.—Between this place and Devanary, which is usually considered the top of the pass, the Beni river is crossed, which I was assured be the natives is identical with the Ooperuputtun river, below the Ghaut. If this be the case, the watershed must be east of Devanary, and probably between it and this place. The stream, swollen by the rains, was unfordable, but is crossed by a rude bridge, called a *sar*, constructed of trunks of trees bound together by leaves, and supported on piers of large rough stones piled up, and secured from being washed away by cases of strong hurdle work thrown round them. The stream was

about thirty paces broad, and running towards the south with great rapidity.

Granite is seen in this vicinity outcropping from the laterite.

The black exterior of the rocks I found to be occasioned by a thin coating of mixed vegetable and ferruginous matter.

The jungle still continues, but is lower than below the Ghauts. The cinnamon tree is abundant: the natives here class it into two species, viz. the male and the female: the former they distinguish by the greater size of its leaf, and the less aromatic and more bitter taste of the bark.

From the top of the Ghauts to Sircy.—The hypogene schists, principally gneiss and hornblende, and a coarse-grained felspathic granite, appear occasionally from beneath the laterite. The low hill, on which the ruins of the old town of Sircy are still to be traced, is covered with a thick stratum of laterite imbedding angular fragments of quartz. The laterite is here used extensively as a building stone; and the quartz is pounded into an excellent sharp sand for mortar.

The indented and more abrupt features, which distinguish the anticlinal line of the Ghauts, are here softened down into smoothly swelling hills, with round tops, in general thickly covered with wood, and vallies in which, and on the hill sides, the cultivation of cardamoms, black-pepper, and the areca nut, is carried on with great success, chiefly by the Haiga Brahmans. The areca trees are planted in rows on strips of ground five or six paces asunder, and separated by channels of running water, two or three feet deep. The pepper vine entwines its clinging tendrils around the tall stems of this graceful tree, covering it thyrsus-like, with its foliage; while the long, flag-leafed cardamom shoots out its string of aromatic seeds along the ground shaded by groves of plantains, which form a sort of underwood beneath the tall arecas. These gardens of spices growing in the midst of forests still uncleared, have a unique and very beautiful appearance. The extreme fertility of the reddish-grey vegetable mould, (in spots where the woodman's axe has not yet been felt,) shows that much still remains to be done.

Sircy is a place of considerable traffic, and a depot for the cotton and other produce of the Southern Mahratta country, ceded districts, and part of Mysore, on its way to Koompta on the western coast, whence

it is shipped for Bombay, &c. It is sent down the Ghaut on loaded bullocks; the pass not being practicable for bandies.

The present town of Sircy comprises between 5,000 and 6,000 inhabitants; principally Lingayets and Concany Brahmans. The chief bankers and merchants are of these different sects: about 800 Mussulmans, Mahrattas, and a few Jains. The custom-house and betelnut depôt are the principal public buildings. There are three distinct bazaars, with one or two broad but dirty and badly-drained streets (1839). The better class of houses are tiled, and often double-roofed.

The ruins of an old but small fort, said to have been built by the Rajas of Soonda, and of a still more ancient one, the work of the Jaina Skeri Rajas, still remain. On the rising ground in this vicinity, foundations of houses and numerous wells attest the former existence of a large and populous town. There is a temple to Virabhadra, and one to the goddess Mariama, whence a snake, patronized by the Brahmans, is said to make its appearance twice a day, probably to be fed. I had not an opportunity of testing this story; which however is by no means unlikely. I have often seen offerings of milk and plantains before the holes of the Cobra, which is held in superstitious veneration by most classes of Hindus. This is the veneration born of fear, which induced the Egyptians to worship the evil principle Typhon,—produced the Devil-worship of Ceylon,—and compelled the poor foresters of the Eastern Isles to make offerings to Thunder and Lightening. Hence the ancient ophitic worship which prevailed so extensively in Southern India, the emblems of which may still be seen piled up carved on rude stones round the walls, or under the trees which shade the older and more secluded pagodas.

From Sircy to Savanûr and Lakiswar.—The face of the country is undulating and interspersed with low, rounded hills to Savanur, in the Southern Mahratta country, about forty-four miles NE. of Sircy. The Canara boundary is crossed about thirteen and a half miles NE. from the latter place. The country is more open; the Ghauts are left behind, and the table land of the Southern Mahratta territory fairly entered on.

The intervening rocks are chiefly the softer members of the hypogene series, as seen at Darwar, viz. argillaceous slate clays, white and vari-

ously tinted with oxyde and hydrate of iron, and earthy chloritic schists. Some of these schists are highly ferruginous. Farther south they pass into the soft, talcose, and chloritic schists, west of Bangalore. Dykes of basaltic greenstone, with beds of kunker, become more frequent as Savanûr is approached. The latter mineral fills up seams in the subjacent rocks.

The breadth of this band of soft schists extends easterly to the town of Lakiswar, and from its northerly strike is evidently the prolongation southerly of similar strata at Darwar already described. The dip at Savanûr was 40° easterly.

Régur was first observed a little to the west of Bankapur; near which town the vegetation, peculiar to the Ghauts, terminates abruptly.

From Lakiswar to Gudduck, granite, gneiss, and hornblende schist are the prevalent rocks, and easterly to Bellary, in the ceded districts; but, as the geology of the country between Gudduck and Bellary, has already been noticed, I shall not dwell farther upon the subject here, but proceed at once on our easterly journey from Bellary towards Cumbum.

Bellary to Davankonda.—Gneiss is the principal rock between Bellary and Davankonda, (a distance of fifty-three miles) basing a plain sloping northerly towards the Tumbuddra, the surface of which (with a few interruptions of reddish alluvial patches) is covered with a thick bed of *Régur*.

The Hogri river is crossed about twelve miles from Bellary, at the village of Moka. It is here about 700 yards broad: its bed is now (May) a dry extent of sand, and its banks barren with the heaps, and hills of drifted sands. The prevailing westerly winds, cause the dunes to march in an easterly direction, north of Auspari. The next march from Moka, the granite is seen bursting through the gneiss in a low ridge: oxydulated iron replacing the mica in grains and nests: east of Auspari a large trap dyke is seen running ESE.

Davankonda is situated at the base of one of the granitic outbursts, on the borders of the Andhra kingdom. Telinghi is much mixed here with the Canarese, or Karnáta, of Bellary.

The soil at the base of the granite is reddish, and sandy to a certain distance round the base: at the edges of this upper layer the *régur* will be found underlying it; and below the *régur* either the gravel result-

ing from the weathering rock, or a bed of kunker. Actynolite, colouring both compact felspar and quartz in drusy crystals in pegmatitic veins of red felspar and quartz in the gneiss, is of common occurrence.

Kupputral.—Is a polegar stronghold, formerly of great notoriety in this country, which bristled with polegar fastnesses and strongholds. The granite rises here into steep bosses, cliffs, and tors, of no great height however.

On the summit of a rocky shelf, crowning the rock, and insulated by a broad fissure in the granite cliff, is perched a small watch-tower, whence there is a good prospect of the surrounding country, the features of which to the south and east are savage and rocky. The nearest approach from Bellary is by rocky ascents and descents, and by defiles not practicable for a cart. On the ascent I picked up a fragment of a very beautiful rock which may be termed actynolite porphyry, being composed of a bright green actynolite felspar (compact), imbedding red felspar crystals.

About a mile east of Kupputral the granite is overlaid by sandstone, which forms the range of Cowilhutty, supporting a flat cultivated table land. I had not an opportunity of examining these rocks at their junction line. A greenstone intersects the granite in the plain.

Codamoor.—At Codamoor, direction SE., fragments of altered sandstone abound: the next march the country is a wide plain, watered by the Hendri river, and studded with bare granitic rocks in small piles and clusters. Gniess, basaltic greenstone in dykes, and a porphyritic granite are the prevalent rocks. A little north of the town runs one of these singular abrupt beds of compact reddish quartz rock, which evidently belongs to the hypogene series by position, interstratification, and conformable dip. It forms a short abrupt ridge, apparently about 100 feet high, and passes into a coarse jasper, penetrated with numerous veins, strangely contorted, of a whiter quartz, with iron glance in nests. It is also veined with siliceous earth, of a grey or bluish tinge, imbedding crystals of felspar, and is often porphyritic in structure.

A thin purplish-black *enduit*, which coated some of the fissures, gave evident traces of iron, and faint traces of manganese on being fused with borax before the blow-pipe.

On the western flank of this range, which runs nearly north and south, a dyke of basaltic greenstone intersects the plain; and near it, one of a

dark chloritic felspar porphyry, which is seen in a section afforded by a well about 40 feet deep, at the south extremity of the ridge. It is overlaid by a stratum of kunker ten feet thick, which has evidently been deposited by water, charged with lime, rising through fissures in the subjacent rocks, which are often encrusted with kunker.

The Hendri river is forded about a mile to the west of Codamoor. It is 220 paces broad; banks and bed of silt and sand, imbedding tufaceous concretions of carbonate of lime, which encrust the roots of grasses, &c. The shallow water in the channel of the river had a temperature of 71° 5′ Fah., which is a little lower than the average temperature of rain water in this part of the ceded districts. The temperature of the air in shade at the time of observation was 81°. The great evaporation going on from the wide, flat, sandy bed, may have diminished the temperature of the shallow stream which slowly trickled along its centre. At Codamoor, the temperature of a brackish well, sixteen feet deep, was 81°; that of a sweet water well, of similar depth, 84°; and that of a third slightly brackish, and thirty feet deep, 83°.

Kurnool.—From Codamoor to Kurnool, at the junction of the Tumbuddra and the Hendri, extends a plain covered with little interruption, by régur. In this plain the diamond limestone and sandstone formation meet with and overlie the hypogene schists; over which we have so long been travelling. The sandstone is seen in the low hills, about one and a half miles south of Perla, which lies ten and a half miles westerly from Kurnool; near this are numerous dykes of basaltic greenstone and deposits of kunker.

A little to the NE. of Peddapa, five and a half miles westerly from Kurnool, the limestone was first observed *in sitû* as a slightly elevated bed, crossing the Kurnool road, running in a southerly direction, and dipping towards the east at an angle of 35°; while the hornblende schists, on which it rested unconformably, were nearly vertical.

The limestone is of a reddish-brown colour externally, but internally of a purplish-red; structure, schistose. It effervesces feebly with acids, and fuses into a light greyish-green enamel, leaving a white calx of caustic lime. It passes into cream-coloured, dull yellow, and green varieties, which were analysed for me by my friend Dr. Macleod, Inspector General of Hospitals, and found to contain so much magnesia

as to give them the character of dolomite. It often contains translucent nodules of a siskin green nephrite. In some places, elliptic and tubular cavities are observed in the massive varieties: the more exposed of which are generally empty; while others are seen filled with a ferruginous clay or earth, which is magnetic after exposure to heat. The elliptic cavities often occur in strings.

A bed of ferruginous sandstone is seen in the limestone, a little further eastward.

The hornblende schist has evidently been greatly waterworn near its contact. Its surface, to the depth of several inches, is much weathered, and has sometimes crumbled into a dark-green sandstone, cemented by calcareous matter from the superincumbent limestone; at others it assumes the aspect of a rust-coloured siliceous schist, impregnated with calcareous matter. Many of the loose blocks of hornblende schist have been much corroded, apparently by aqueous action.

As the edges of the limestone are left behind, and as we advance soon towards the centre of its area, the disturbance and dip become less, till near Kurnool, as seen in the banks of the Hendri and Tumbuddra, the beds are nearly horizontal. Another change of dip, from the nearly horizontal to the vertical, may be seen in the space of a few yards in the limestone beds to the right after entering the western, or new gate of Kurnool fort.

The colour of the limestone at Kurnool is generally a light bluish-grey, which passes into a deep blackish-blue. Near trap dykes, it often becomes crystalline, magnesian, and cream-coloured; or speckled and variegated with green bands, like some varieties of serpentine.

It usually abounds with iron pyrites; and to the right of the western gate in the fosse of the fort, may be seen to imbed a fine layer of red jasper, often reticulated by bluish quartz, and calcedonic veins. This jasper also runs in veins, and occasionally in nodules. Near this, the limestone strata have evidently undergone plutonic disturbance, being elevated with waving and bending of the layers into a nearly vertical position as before mentioned.

From Kurnool to the Eastern Ghauts.—After having forded the Hendri to the eastward, low rugged hills, the outgoings of a great dyke of basaltic greenstone, having a westerly direction, are crossed, altering

the limestone and its associated purple shales in a singular manner. The latter are converted into a compact jaspideous rock, and the former loses its carbonaceous colouring matter, and becomes siliceous, or magnesian, or both, and is often coloured, with green bands and specks. The portions nearest to the dykes sometimes break, when struck by the hammer into fragments with smooth sides, marked with dendritic delineations.

Beyond these hills, the head of the central sandstone range of Kurnool, is rounded to the broad and almost flat valley of Nundial, based on the limestone and its shales, which are generally of a chocolate and reddish hue, with thin seams and layers of faint green. The surface soil is for the most part régur: on a sub-soil of limestone debris, or on beds of kunker, a poor pisiform iron clay is sometimes found, mingled in the lower portions of the *régur*.

Eastern Ghauts.—Having crossed the valley of Nundial, the eastern Ghauts are approached at Gazoopilly, a pleasant village at their western base. Their outline is apparently pretty level, continuous, but broken now and then, by a hog-backed ridge, or the rounded frustrum of a cone, rising above the general elevation of the central anticlinal range, which may be about 1,000 feet above the plain; though few of the highest peaks attain the elevation of upwards of 3,000 feet above the sea. The base, sides, and most of the summits, are clothed with jungle infested by tigers.

Lead Mines and Sulphate of Barytes.—After ascending the Nundi Cunnama pass, about three miles, and crossing the first chain of hills, we turned from the bullock-road into the jungle on our right, and ascended a steep rocky hill. The descent on the other side brought us on the Mahdeopur wood cutters' tracts, along which we proceeded 4 or 500 yards easterly, passing a small, rough, stone enclosure, formerly used for washing the diamond alluvium. We now again turned into the jungle on the right of the path, and passed up the dry channel of a brook, which ran westerly in a deep defile. After a few minutes' walk, two jungle-covered hills rose on each bank from the brook's margin. The one on our right was covered with clumps of bamboos, and rugged from top to bottom with choked up excavations. I traversed an area thus broken up, upward of half a square mile in extent. These excava-

tions are of irregular shape and size, and vary now from five to fifteen feet deep.

The formation is the shales and schists of the diamond limestone and sandstone, here of a dull greyish-blue, and green hue, argillaceous in character, and veined in all directions by white quartz and chert. These veins are the matrix of the galena and sulphate of barytes. The former new mineral occurs in nests and strings of great brilliancy and purity, but I did not observe any thing like a continuous lode. The sulphate of barytes is in large masses, nodules, and short veins, associated with a dull-green crystallized mineral, calc spar, a white mineral like calamine, iron pyrites, and a faint reddish mineral, sometimes compact, and sometimes approaching saccharine in texture; which, Mr. Piddington, after analysis, has pronounced to be that rare mineral, carbonate of cerium. The quartz composing these veins is often honeycombed, and its cavities lined with an orange-brown coloured dust, as we see in the vein stuff of European mines. The excavations are overgrown with brushwood, and apparently have long been deserted. They are about six miles east of Gazoopilly, and within a short distance of the principal coast communication of Nellore with the table lands of the ceded districts by the Nundi Cunnama pass; and the jungles yield a cheap and never-failing supply of fuel; but until the discovery of a continuous lode, it would hardly be advisable to enter deeply into any mining speculation in those plumbiferous tracts. However, there can be no doubt, that these localities have not yet been fairly tested by European practical skill and experience.

Buswapúr Diamond Mines.—The diamond pits of Buswapúr are still nearer to Gazoopilly, extending from about quarter of a mile NW. from the present village of Buswapúr, easterly towards the base of the eastern Ghauts, and covering an area of certainly two square miles. They are even more overgrown by jungle than the lead mines, and have evidently been given up at a more ancient date.

About three-quarters of a mile SE. from the modern Buswapúr, near the ruins of the old village, are about twenty other excavations overgrown with thicket, like the rest; and ten more midway between them and Gazoopilly, a little to the south of the foot-path to the pass. These excavations vary from two and three yards to fifteen yards in

length, and from one to four or five yards in breadth: their present depth (much choked up by rubbish) is from five or six feet to sixteen feet. The only stratum cut through is a thin layer of reddish alluvial soil, into a bed of gravel of unknown thickness in some parts. The pebbles composing these gravels have evidently been derived from the limestone and sandstone hills of the Ghauts, at the western base of which they immediately lie, and consist principally of cherts of various colours, quartz, compact sandstone, and a few of basanite. Layers of sand are occasionally interstratified.

Some of the pebbles are as large as a cocoanut, but the generality not larger than an orange or walnut; most of them rounded, and lying on their flat sides, having the major axis in an east and westerly direction. I cannot find that the rains of present monsoons add to some of these gravel beds, many of which are situated far from the reach of present torrents, and through which the streams often cut deep channels; but am rather inclined to believe, that some of them must have originated during the elevation of these mountains from the bed of the ocean.

Nundi Cunnama pass.—This pass lies in the direct line of commercial communication from the coast and ports of Nellore, Masulipatam and Ramapatam, with Kurnool, the ceded districts, and Southern Mahratta country. It is steep, and can only be traversed like the Hegulla pass, by bullocks lightly laden, but is susceptible of great improvement. Yet with the exception of those of Sidhout, Jungumrazpilly and Yeddedgoo, the Nundi Cunnama is the most practicable, and certainly in the most direct line. Loaded bandies are compelled to take the circuitous route of Cuddapah and the Yeddedgoo pass.

The improvement of the Nundi Cunnama into a road practicable for bandies, would much improve the trade of the districts to the west of it. In 1836, from information obtained on the spot, about 1,000 bullocks pass over from the eastern coast laden with its salt and cloths, and returning with iron for ploughs, the produce of hill furnaces, and cocoanuts, betelnuts, and teak and other timber. Remnants of wells in the forest, and a small ancient temple to the Bull Nundi, (hence its name) attest the antiquity of this channel of commerce. The formation is similar to that described around the lead mines: but the higher ridges are capped with sandstone. That singular aboriginal race, the Chen-

suara, act as a hill police. I have given an account of them elsewhere. They may be seen usually at Metta and Pacherla, two police stations in the forest.

The pass itself is not much more than two and a half miles, but the breadth of the hilly and jungly tracts from Gazoopilly to Kistnashettypilly, on the eastern side of the range, cannot be less than twenty-three miles.

Cumbum.—Cumbum is nineteen and a half miles to the eastward of Kistnashettypilly. The hills near the bund of the large and beautiful tank, are of sandstone. This fine sheet of water is about five miles long by three or four broad. It is nearly surrounded by picturesque hills, and several rocky islets stud its bosom.

From Cumbum to Budwail.—We shall now turn southerly, down the Cummum or Budwail valley, which is chiefly based on the shales of the diamond sandstones and limestone formation running southerly, and containing veins, and large beds of white quartz. Near Yelmacul a mass of porphyritic syenite is seen rising abruptly through the shales at its base. A pagoda built on its summit renders it conspicuous. The wells near its base exhibit the fissures of the shales, encrusted with carbonate of lime. This is the case also farther south, in the valley at Poormáwala, when the quartz veins frequently imbed iron pyrites. The summits of the range running down the centre of the valley from Poormáwala by Budwail to the Pennaur, I found capped with compact sandstone, in almost tabular masses, associated with arenaceous schists. The lower parts and base are composed of the shales or slates.

From Budwail to the Auripoya pass.—From Budwail, southerly to the Auripoya pass, the shales prevail, and become softer and lighter coloured. The soil is chiefly reddish, light, fertile, and generally well watered. Subsoil—a bed of kunker, nodules of which and fragments of quartz, often honey-combed, are scattered over the surface of the lower part of the valley.

Auripoya pass.—This is a rugged pass, about eight miles long, through the Sidhout ranges into the transverse valley by which the Pennaur passes, through the Ghauts to the maritime plain of Nellore. Here sandstone and arenaceous schists prevail; angular blocks of which, and fragments of a white and a grey smoky quartz, encumber

the bottom of the pass; till, at length, it debouches on the sandy bed of the Pennaur, a little to the east of Sidhout fort.

Sidhout.—The blue limestone is said by the natives to be found under the sands of the river; and it is seen in blocks in the walls of the fort; but the hills, which I had an opportunity of examining, were all of sandstone, and sandstone conglomerate.

A beautifully variegated variety of sandstone is quarried near this. The Hindu pillars in the fort gateways, which are carved out of it, have the appearance of an elegantly veined wood. The tints are often waved, or acutely angled bands of different shades of brown, resembling on a large scale those in agate.

Diamonds, I was informed, during the rule of the Patan Nawabs of Cuddapah, who often made Sidhout their place of residence, were dug at Durjipilly, and, at another place among the neighbouring hills.

The Pass of Sidhout.—The pass of Sidhout is a transverse valley, as before stated, through which the Pennaur flows from the table lands of the ceded districts, through the Eastern Ghauts to the Coromandel Coast. There does not, however, appear to be any great or sudden lowering of level to the coast-land, as we find that the height of Cuddapah, 507 feet above the sea (Cullen), hardly exceeds that of the plain at the eastern base of the Ghauts. The course of the Pennaur, therefore, at Sidhout, from the little inclination of its bed to the eastward, is not more accelerated than when winding its way over the gently sloping table lands. The general direction of this transverse break in the Ghauts is easterly; though, like that of Gundicutta, it makes considerable angles. It is about twenty-four miles long, and about two and a half miles broad at Sidhout. I have not had an opportunity of examining its eastern exit near the Someswar pagoda; where, I understand, the river is confined between two rocky ridges, about half a mile asunder.

From Sidhout to Cuddapah.—The road lies along the valley of the Pennaur, which opens out to the westward into the horizon-bounded plains of Cuddapah. The rock seen in the lowest situations, is a bluish and rather grey crystalline limestone, bounded on either side by the high sandstone ranges of the easterly ghauts. The limestone is veined with quartz and calcspar, and imbeds cubic crystals of iron pyrites. A few

miles from Cuddapah, it crosses the valley of the Pennaur in a well defined ridge, across which the road lies by a small pass, called the Bundi Cunnama. The ridge to the south I found to be capped by sandstone. The limestone here has an external scabrous aspect, owing to the less rapid weathering of the veins of chert which run through it, and which project in relief from its surface. At the eastern foot of the pass the rock has been excavated for the sake of the dark flint-like chert it imbeds, which was formerly used for gun-flints by the armies of the Cuddapah Nuwabs, and by those of Hyder and Tippoo; but the material is too brittle to make good flints. It is veined with quartz which often forms a perfect network of cells, lined and stained with an orange-coloured ochre.

Cuddapah.—The limestone formation in the vicinity of Cuddapah and the sandstone ranges to its south, have been described in notes from Madras to Goa. The latter range I crossed to Govincherroo, in the plain on the other side, by the Bankrapett pass.

Govincherroo to Rachooty.—At Govincherroo granite is seen in low bosses and large blocks, *in sitû*, at the base of the sandstone range; and is thus occasionally seen in tors and logging stones, and in the beds of nullas, in the plain to Rachooty, about thirty-four and a half miles south from Cuddapah. Near Rachooty, it often passes into pigmatite; actynolite and chlorite are seen in its veins. This granite formation evidently extends to the eastward to the bases of the sandstone ranges of Chendorghirry and Tripati, which are seen in picturesque outline, flanking the plain and bounding the view to the right.

The drainage lines of this part of the plain from Punganore, converge in a N. by E. direction, to the singular gaps of Mandasir and Cheyair, in the chain through which they find their way northerly to the bed of the Pennaur near Sidhout, which we have lately left. It might be worth while to examine the configuration of these gaps, and the sections afforded by them. Dykes of basaltic greenstone are occasionally seen in the granite.

Rachooty to Chittoor.—The road lies over a flattish valley between irregular clusters of granite rocks on either side, which occasionally approach and recede, and sometimes disappear for a while, appearing again at irregular intervals. Spurs of the rocks occasionally cross the valley or

plain; and also dykes of basaltic greenstone, which were numerous south of Peelair.

About ten miles from Peelair, and six from Damulcherry, a short and easy pass in the granitic ridge to the left, leads the traveller almost insensibly over the great line of elevation, by the village of Damulcherry, into the plains of the Carnatic. About seven miles north of Damulcherry, runs the modern boundary of Cuddapah and Arcot, precisely on the ancient position of the Andhra and Dravida regions. At Damulcherry both Tamul and Telinghi are spoken, and the latter language I found much in vogue at Chittoor.

At Peelair, gneiss and hornblende schists appear more frequently near the bases of the granite hills; and, at Damulcherry, the same rocks, with a leptinitic gneiss veined with eurite and small grained granite, are the prevailing rocks.

From Damulcherry to Chittoor the floor of the break in the Ghauts, is an undulating bed of gneiss and hornblende schists. The more abrupt and peaked elevations on the north and south of the break, appear to be of granite.

About ten or twelve miles WNW. from Chittoor the descent to the last is palpable, but easy and gradual, very unlike the abrupt and high pass of Naikanairy farther south. The country is open and free from jungle, which is confined to the ravines and sides of the lofty hills of gneiss. The latter in their bold, rounded contour, and partially wooded sides, reminded me of the Pyrenees near Rosas.

In the distance to the north of the foot of this descent, is seen the high columnar rock of Pillyconda, (Tiger's hill) a striking object on the horizon.

Chittoor.—Chittoor stands in the plain at the northern and western base of a granitic range which runs south-westerly towards the Javadic ranges, which skirt the eastern flank of the Amboor valley. The granite composing the rocks, close to the travellers' bungalow, contains large crystals of foliated hornblende, sometimes curiously interlaminated with olive-green mica. The crystals of felspar are usually white, with red and faint green crystals interspersed. The felspar is occasionally translucent, and assimilates albite in external characters.

The exterior of many of the large masses of granite, which cover the hill, abounds with little cavities, from the size of a pea to that of a wal-

nut, occasioned by the weathering and falling out of the nests of mica and hornblende just mentioned.

Actynolite, chlorite, and pale rose-coloured garnet were the other minerals observed in this granite.

The range of hills, having a north and south direction, and though a break in which the Chittoor river runs easterly to the Poni river, I found to consist of gneiss often highly contorted and penetrated by granite in large dykes. Some portions of this gneiss are granitoidal, and, in hand specimens, would be set down as granite; dykes of basaltic greenstone also penetrate both granite and gneiss.

Before closing this paper I must remark, that the soil from the plain of Rachooty to Chittoor, has been generally of a reddish and sandy nature, evidently the alluvium of granitic and hypogene rocks.

The great sheets of régur end abruptly near Cuddapah, their barrier to the south in this direction appears to have been the Bankripattah hills.

ल्लासयाटिक् सोसाइट् संस्कृत नागराक्षर ॥

महाभारतं आद्यन्त ४ खण्ड	४०
महाभारतीयान्तर्गतसूचीपत्रं आद्यन्त ४ खण्ड	६
नैषध आद्यन्त सटीक् १ खण्ड	६
हरिवंश आद्यन्त १ खण्ड	५
राजतरङ्गिणी आद्यन्त १ खण्ड ...	५
सुश्रुत आद्यन्त २ खण्ड	८
सूची पुस्तकं १ खण्ड	१
लासनेन रचितं सर्व साधारण	४
गीतगोविन्द् १ खण्ड	२॥
यज्ञदत्तवधः १ खण्ड	२२॥
शकुन्तला नाटक्	१०

فهرست كتابهاي عربي وفارسي مطبوع كه در خانهٔ اشياتک سوسيتي حسب تفصيل الذيل بقيمتهاي مناسب براي فروخت موجود اند

اسامي كتب				قيمت
فتاوى عالمگيري مرتب بشش جلد في جلد				هشت روپيه
عنايه جلد ثاني وثالث ورابع في جلد			...	هشت روپيه
شرائع الاسلام	...	...	...	هشت روپيه
انيس المشرحين	...	...	...	پنج روپيه
جوامع علم رياضي	...	...	...	چهار روپيه
اصطلاحات صوفيه	...	...	...	پنج روپيه
خزانة العلم	...	...	...	هشت روپيه
تاريخ نادري	...	...	...	هشت روپيه

فهرست كتب كالج فورت وليم واشياتک سوسيتي يكروپيه

The ordinary meeting of the Society for the month was held, as usual, at the Society's Rooms, at $8\frac{1}{2}$ P. M. on Wednesday, the 3d June.

The Rev. Dr. Hæberlin occupied the chair as Senior member, present, of the Committee of Papers.

James Hume, Esq., proposed at the last meeting, was duly ballotted for and elected a member of the Society. The usual communications were ordered on the occasion.

The minutes of proceedings at the May meeting were read, confirmed and ordered to be published.

Read the following list of additions to the library during the last month :—

PRESENTED.

1.—La Rhétorique des Nations Musalmanes, d'après le traite Persian, intitulé, *Hadayik-ul-Balaghat*. Par M. Garcin de Tassy, Membre de l'Institut, &c. —From the AUTHOR. 1

2.—A Primer of the Seelong language.—From GOVERNMENT. 1

3.—The History of the British Empire in India, by Edward Thornton, Esq., author of "India, its state and prospects," &c.—From GOVERNMENT. 5

4.—A Gazetteer of the countries adjacent to India on the North-west; including Scinde, Affghanistan, Beloochistan, the Punjab and the neighbouring States. Compiled by the authority of the Honourable Court of Directors of the E. I. C., and chiefly from documents in their possession, by Edward Thornton, Esq.—From the GOVERNMENT. 2

5.—History of the Batavian Society of the Arts and Sciences. By Dr. S. J. Budding.—From the AUTHOR..... 1

6.—Journal of an Experimental Voyage up the Ganges, on board the H. C. Steamer *Megna*. By Capt. Digney, commander.—From GOVERNMENT. .. 1

7.—Meteorological Register for April, 1846.—From the SURVEYOR GENERAL'S OFFICE..... 1

8.—Calcutta Christian Observer for June, 1846.—From the EDITORS..... 1

9.—Oriental Christian Spectator for May, 1846.—From the EDITOR. 1

EXCHANGED.

10.—Journal Asiatique : quatrieme serie, tom. VI. Nos. 28 and 29, Novembre et Decembre, 1845. 2

11.—London, Edinburgh and Dublin Philosophical Magazine; 3d series, No. 186, March, 1846. 1
12.—The Athenæum, March 21st, 1846. 1

PURCHASED.

13.—Annals and Magazine of Natural History, No. 111, March, 1846. 1

Ordered that the unbound books be bound as soon as possible.

Read a letter from C. Beadon, Esq. Under Secretary to the Government of Bengal, accompanying a presentation to the Society, from the Government, of a Primer of the Seelong language, forwarded by the Commissioner of the Tenasserim Provinces, together with a copy of that officer's letter containing some account of the Seelongese.

Ordered that the paper on the Seelongese be referred for publication in the Journal.

Read a letter dated 11th February, 1846, from C. Beadon, Esq., Under Secretary to the Government of Bengal, forwarding for publication in the Journal, copies of a correspondence regarding some samples of coal discovered by Lieut.-Col. Ouseley, Agent to the Governor General and Commissioner on the South-west Frontier.

Ordered that the correspondence in question be referred to the Curator in the Mineralogical department for report.

Read the following letter from J. Thornton, Esq., Secretary to the Government of the North-western provinces.

No. 455.

FROM J. THORNTON, ESQ. *Secretary to Government, North Western Provinces,* to H. TORRENS, ESQ. *Secretary to the Asiatic Society, Calcutta.*

GENERAL DEPARTMENT, N. W. P.

SIR,—I am desired to request that you will lay before the Asiatic Society, the accompanying report on the Cave Temples at Kallinjur, in Bundlekund, prepared by Ensign Maisey, of the 67th Native Infantry, at the instance of Mr. H. Rose, C. S., Magistrate and Collector of Banda.

2. The Society will perceive that these researches have been prosecuted in pursuance of the Instructions of the Honourable the Court of Directors, dated May 29th, 1844, on the subject of antiquities of this

Copy of letter of Secretary to Mr. Rose, dated September 15th, 1845.
Extract paras. 1, 4 of Mr. Rose's letter of May 6th, 1846.
Mr. Maisey's Report in Original.
Inscriptions, Drawings, } Original.
Copy of Mr. Rose's notes.

nature. The sudden summons of this enterprising young Officer, Ensign Maisey, to march with his corps to the frontier, during the late war with the Sikhs, interrupted his operations, and left them in a very incomplete state. There is, however, good reason to hope that he will be able to renew his enquiries during the next cold season.

3. In the mean time the Lieut.-Governor believes that he is best consulting the wishes of the Honourable Court in forwarding to the Society this incomplete account, in the hope that if they consider it worthy of publication they will give it a place in their Journal. The progress which has been made will thus not be lost, and this curious series of temples will, at any rate, be prominently brought to the notice of those who are skilled and experienced in such researches.

4. The Lieut.-Governor begs to be favored with 50 Copies of any publications on the subject which the Society may put forth.

I have the honor to be, Sir,
Your most obedient servant,
J. THORNTON,
Secretary to Government, North Western Provinces.

Agra, the 19th May, 1846.

Ordered that the special thanks of the Society be returned for the communications above alluded to, and that they be published in an early number of the Journal.

Read the following extract of a letter to the Secretary from the Hon'ble J. Thomason, dated May 13th, 1846.

I hope to be able to send you soon another interesting account of a number of Buddhist cave temples or monasteries discovered at a place called Mundab in the Rewah country, about 100 miles due south of Mirzapore. I know not whether the existence of these caves has ever been mentioned before. There are several of them. From the drawings I have seen, they are like the Vihara caves of Central India, but as yet no inscriptions have been found.

Read a letter from Dr. Wise, dated Dacca, 23d February, 1846, apprising the Secretary of the despatch of the copies of his Commentary on the Hindu System of Medicine, which were subscribed for by the Society. Dr. Wise further stated the price to be ten rupees a copy.

Read the following extracts of a letter to the Secretary from Mrs. Ballin :—

I beg to send Mr. Ellis to receive your orders respecting the remaining sets of drawings of Sir A. Burnes' work (6 in number) which are to be rectified, and also for the 7 sets that have been at the Society's rooms since February last for examination.

I beg leave to bring to your notice, that more than three years have expired since these drawings were originally sent by me for examination, and it was only within

the last year that they or some of them were given back to me to be rectified. The length of time therefore the paper has been kept makes it a difficulty to remove the color already used, and consequently I have been put to an additional expense to have the drawings retouched which would not have been the case had they been returned to me in proper time.

The Secretary expressed his regret, that in consequence of Mr. Piddington's resignation of the Secretaryship to the Burnes' Committee, a full report is not yet ready for submission.

Read a letter from Mr. Piddington, the Secretary to the Dwarkanath Testimonial Committee, presenting to the Asiatic Society, on the part of the committee and subscribers, a framed proof engraving of Babu Dwarkanath Tagore.

Ordered that the thanks of the Society be returned to the Committee for its kind attention.

Read the following list of Oriental publications sold :—

Memorandum of the Oriental Publications sold in the month of May, 1846.

Rája Tarangini, (one copy), @ 5, ...	5	0	0
Mahabharata, 1st Vol. 1 copy; 2d ditto 1 copy; 3d ditto 2 copies; 4th ditto 1 copy } 5 copies, @10.....	50	0	0
Index to Mahabharata, 1st Vol. 2 copies; 2d ditto 2 copies; 3d ditto 2 copies; 4th ditto 2 copies } being 8 copies, @ 1-8.....	12	0	0
Asiatic Researches, Vol. 19, part 2-1; Vol. 20, part 1. 1 } being 2 copies, @ 5.....	10	0	0
Journal of the Asiatic Society, Nos. 158, 162, & 164 being 3 copies, @ 2.....	6	0	0
Nos. 156 to 162, being 7 copies, @ 1-8.....	10	8	0
Co's. Rupees,	93	8	0

RAJ KRISHNA MITTRA,
Officiating Librarian and Assistant-Secretary Asiatic Society.

Asiatic Society's Rooms, 31st May, 1846.

Some general conversation having taken place on the propriety and expediency of selling the Oriental Publications of the Society to Scholastic institutions at reduced prices it was formally

Moved by the Chairman, seconded by the Secretary, and unanimously resolved:—

That all educational institutions should be supplied with the oriental publications of the Society at half the price they are sold to others.

Read a report from Mr. Tucker, the Librarian to the Medical and Physical Society, stating that the instructions of the Secretary to remove the books of the Medical Society into the Library of the Asiatic Society have not been entirely carried out from want of room; two more shelves being requisite.

Ordered that the shelves required be sanctioned.

Read a letter, dated Batavia, 18th April, 1846, from Dr. S. J. Budding, to the Society, accompanying the gift of his "History of the Batavian Society of Arts and Sciences from 1778 to the present day."

Ordered that the thanks of the Society be returned to Dr. Budding.

Read a letter, dated London, 30th March, 1846, from Mr. Hugh Cumming, apprising the Secretary that he had forwarded by the *Essex* parts 13 to 36 of Reeves' Iconica Conchologica, and parts 4 to 6 of Sowerby's Thesaurus, subscribed for by the Society. Mr. Cumming likewise renewed his request for duplicates of shells from the Society's Museum.

Ordered that the letter be made over to Mr. Blyth.

Read a letter from Mr. Blyth to the Secretary, requesting the appointment of guards over the rooms of the Museum, additional assistance in the taxidermist's department, and an augmentation of salary for his assistant Mr. Roberts.

Ordered that the propositions of Mr. Blyth be referred to the Committee of Finance for report.

Proposed by Capt. Marshall, seconded by the Secretary, and unanimously resolved:—

That the names of Dr. Hæberlin and of R. W. G. Frith, Esq., be added to those already on the Committee of Finance.

Read the following Report for May, 1846, by the Geological Curator.

GEOLOGICAL AND MINERALOGICAL.

Dr. Bradley, Nizam's Service, Ellichpoor sends us some concretions which he supposes to be coprolites, and adduces them as "one of many corroborative proofs that their sandstone rocks are identical with the new red sandstone of England."

I find, on dissection with dilute muriatic acid, that the grey ones are *now* merely calcareous concretions of silica and apparently fragments of flint, and the red ones ferruginous concretions, also of siliceous matter, coloured almost to heliotrope by peroxide of iron, but yielding this after some days digestion in muriatic acid. The white concretionary matter is apparently also siliceous, as these red specimens give but very little effervescence.

I am thus on the whole (and especially by comparison with our own specimens from Dr. Buckland) inclined to think that these are not coprolites, nevertheless I would not speak positively at present.

Dr. Bradley has also sent us a specimen of a silicified substance which he thinks must once have been an organic body, and he states that Professor Orlebar, of Bombay, also agrees with him in this opinion. It is at present a pure chalcedony, whatever it may formerly have been.

I have the pleasure to announce a valuable addition to our collection in a meteorolite of a good size, discovered amongst a pile of specimens, without labels or numbers, in the Coal Committee's collections, which I have been busy in arranging. I trust to obtain yet some notice of this valuable treasure, which for us is truly one, for it is of a kind which we had not yet so perfect in the curious marbling which it presents on fracture. I have not had time to look for the different descriptions of these substances so as to see if any are described resembling it.

MUSEUM OF ECONOMIC GEOLOGY.

As I have only been convalescent in the latter part of this month I must defer till the next report noting what I have been able to do.

For all the presentations and communications the thanks of the Society were accorded.

The ordinary meeting for the month was held, as usual, at the Rooms, on Wednesday the 1st July, at ½ past 8 P. M.

The Rev. Dr. Hæberlin occupied the chair, as senior member present of the Committee of Papers.

The minutes of proceedings at the June meeting were read, confirmed and ordered to be published.

The following gentlemen were proposed for election at the next meeting :—

A. Mitchell, Esq., Proposed by T. W. Laidlay, Esq., seconded by E. Blyth, Esq.

E. A. Samuells, Esq. proposed by B. Colvin, Esq., seconded by H. Piddington, Esq.

Read the following list of additions to the Library during the last month :—

PRESENTED.

1.—Report of the Committee for the investigation of the Coal and Mineral Resources of India, May, 1845. By the GOVERNMENT. Two copies, *fol*... 2

2.—Remarks on the Scope and Uses of Military Literature and History.—By the AUTHOR,... 1

3.—Philosophical Transactions of the Royal Society of London for 1845, (part II.)—By the SOCIETY... 1

4.—Proceedings of the Royal Society ; No. 60, (1844) and 61, 62, (1845).—By the SOCIETY... 3

5.—List of Members of the Royal Society (30th November, 1845).—By the SOCIETY. ... 1

6.—Journal of the Agricultural and Horticultural Society of India. (Vol. V. part II.)—By the SOCIETY,... 1

7.—Meteorological Register for May, 1846.—By the SURVEYOR GENERAL'S OFFICE. ... 1

8.—Oriental Christian Spectator for June, 1846.—By the EDITOR ... 1

EXCHANGED.

9.—Journal Asiatique : quatrieme serie, tome VII. Nos. 30 and 31. Jan. et Fev. 1846. ... 2

10.—Edinburgh New Philosophical Journal, No. 80, April, 1846. ... 1

11.—London, Edinburgh and Dublin Philosophical Magazine, No. 187, April, 1846. 1
12.—The Athenæum, No. 966, 2d May, 1846. 1

PURCHASED.

13.—Annals and Magazine of Natural History, No. 112, April, 1846..... 1
14.—The Classical Museum, No. XI. 1
15.—Religions de L'Antiquité, (one copy.)..... 6

Ordered that one of the two copies of the Coal Committee's Report, presented to the Society, be made over to the Geological Curator for the use of his department.

Some conversation having arisen on the subject of the resolution come to at the last meeting, with reference to the sale of oriental publications to educational establishments, it was resolved further that the Council of Education should be formally made acquainted with the determination of the Society, and the Secretary took it upon himself otherwise to diffuse a knowledge of it as widely as he possibly could among the public.

Read a letter from J. Agabeg, Esq., dated 11th June, 1846, presenting a model of a Cingalese boat to the Society.

Ordered that the thanks of the Society be returned to Mr. Agabeg for his donation.

Read the following letters from Messrs. Allen and Co. relative to matters connected with their agency.

HENRY TORRENS, ESQ., *Secretary of the Asiatic Society of Bengal.*

SIR,—We have received your favour of the 3d September, ordering us to return to India about half the stock of the Asiatic Researches received from Mr. John Murray in March, 1844.

We have had the volumes named in your letter divided into equal proportions, in case of accident to the vessel, and have shipped one portion packed in six cases, by the *Euphrates*, Captain Wilson, and for which we beg to enclose a Bill of Lading. We annex a memorandum of the cost of the cases and the shipping expenses upon them, amounting to £18·2, which sum we shall place to the debit of the Society. The Researches were received from Mr. Murray in sheets, and in the absence of instructions, we have not thought it advisable to subject the Society to the expenses of binding so large a number of volumes without orders to that effect.

The shipment has not been insured, but should you think it necessary it can be done in Calcutta upon the receipt of this advice nearly as cheap as it could have been effected here.

The second portion of the Researches will be forwarded by the next vessel to Calcutta; should you think it necessary to effect insurance, both shipments may be done at the same time, as the next will be a duplicate of the present.

We shall be obliged by your saying what we are to do with the Researches that will, after the second shipment, still remain on our hands; we have some time since expressed our inability to dispose even of one set, and were the Researches advertized we fear the result would not be satisfactory. We shall have no objection to continue the care of the Researches, but if we cannot make sales it is only reasonable that we should charge ware-house room for the Books,—we shall be much obliged if you will consider the subject and let us know what you think should be done.

We have the honor to be, Sir,
Your faithful Servants,
W. H. ALLEN AND Co.

London, 3d December, 1845.

To HENRY TORRENS, Esq. *Secretary to the Asiatic Society, Calcutta.*

SIR,—We have the pleasure to enclose you Bill of Lading for a case of Books, consigned to you on the "*Samarang*," Captain W. Buckle, for, and on account of, the Society:—This case was forwarded to us, from Rotterdam, without any advice, a Bill of Lading having only reached us through the broker. As the least cost to the Society, we had it landed for exportation, and now hand you the total cost of charges incurred, £4 13*s*. 6*d*. We have thought it right to insure the package in the sum of £50. We shall be obliged by your instructions as to any future packages, that may reach us in the same manner.

Your favor of the 8th December last, verifying our account to the 30th of June, has been received: the balance, after the payment by us for the bust of Mr. Hodgson, being £14 1*s*. 9*d* in our favor.

Mr. Francis Grant has completed a portrait of W. W. Bird, Esq. for the Society; his charge for which, including case and packing, has been one hundred and fifteen pounds (£115); to this we shall have to add shipping expences, freight and insurance, amounting, to about £10 or £11 more. We doubt not the Society will enable you to remit us a bill on account. We have had the advice and assistance of Mr. Bird, in the selection of the artist, and we trust the Society will be pleased with the striking likeness to the original. Bearing in mind that if this portrait was to be now shipped, it would arrive at the worst part of the year, Mr. Bird has agreed with us, as to the propriety of not sending it out until the departure of one of the last best ships of the season: we shall thus ship it so as to arrive out after the rains, and we trust the Society will approve of the same.

We have the honor to be, Sir,
Your most obedient servants,
WM. H. ALLEN AND Co.

7, *Leadenhall Street, London, April 18th*, 1846.

ASIATIC SOCIETY, CALCUTTA, To WM. H. ALLEN AND CO.

Paid Disbursements, Freight, &c. on a Case of Books weigbing 113lbs. received per *Giraffe* from Rotterdam,.....	0	17	0
Entry, Warehousing, Lighterage, Wharf Charges, Shipping Expences, Bonding and Cartage to the Docks, shipping the above per *Samarang*,	1	12	0
Bills of Lading, Freight, and Insurance on £ 50, ...	2	4	6
£	4	13	6

(Signed) WM. H. ALLEN AND CO.

ASIATIC SOCIETY, CALCUTTA, To WM. H ALLEN AND CO.

5	Asiatic Researches,	Vol. 1, 4to.	5	Asiatic Researches,	Vol. 14.
2	Ditto	Vol. 2.	50	Ditto	Vol. 14, 4to.
40	Ditto	Vol. 10.	25	Ditto	Vol. 6, 4to.
50	Ditto	Vol. 7, 4to.	30	Ditto	Vol. 8, 4to.
50	Ditto	Vol. 9, 4to.	100	Ditto	Vol. 12, 8vo.
7	Ditto	Vol. 13.	13	Ditto	Vol. 12, 4to.

Charges.

Six Cases for packing lined with Tin, 1 to 6, at 33*s.* each, ...	9	18	0
Packing and examining the same, ...	1	12	0
Entry, Cartage to the West India Docks, Wharf Charges, Shipping Expences and Bills of Lading, ...	2	7	0
Freight and Primage, ...	4	5	0
£	18	2	0

(Signed) WM. H. ALLEN AND CO.

Read a letter from C. Beadon, Esq , Under Secretary to the Government of Bengal, dated 17th June, 1846, and its two official enclosures, announcing a donation to the Asiatic Society of a copy of the " Natural History of New York," in ten volumes quarto, with a geological map accompanying, by the Regents of the University of the State of New York, *ex officio* " Trustees of the State Library, acting as the representatives of the State." The remaining volumes of the undertaking when completed are promised to be duly forwarded.

Read a letter from S. Hunter Christie, Esq., Secretary to the Royal Society, dated 20th March, 1846, expressing the thanks of that Association for the volumes of the Journal presented to it by the Asiatic Society, and requesting the Society to complete the set by despatch of volumes I, II, VIII; of Nos. 21 to 24 (inclusive) of volume IX. (1840); and

of Nos. 25 to 29 (inclusive) of volumes X. (1841). Ordered that the volumes in question be forwarded to the Royal Society.

Read a letter from Dr. Martius, Secretary to the Mathematical and Physical Class of the Royal Academy of Munich, dated 6th April, 1846, thanking the Asiatic Society on the part of the Academy for the present of a set of its oriental publications, and announcing that the Academy has despatched in return a set of its Memoirs and a selection of such of the smaller Academical publications as it judges convenient for the purpose of the Asiatic Society. The communication went on to state that at the request of the Academy, the Royal Mining department of Bavaria had made over to it, for the Society, "three chests containing échantillons of the Bavarian carboniferous formations, and of the Loess formation of the Rhine;" and a further collection illustrative of the Trap formation in the neighbourhood of Bonn from the Siebengebirge, is promised. Dr. Martius likewise presents on his own behalf a copy of his "Systema materiæ medicæ vegetabilis Brasiliensis," and on behalf of Professor von Kobell, a copy of a memoir by that learned gentleman on Galvanographics.

Read the following letter addressed to the Curator of the Zoological department, whose exertions in opening out new channels of scientific intercourse with foreign institutions received the expression of the Society's great satisfaction on the occasion.

Edward Blyth, Esq., *Asiatic Society's Museum, Calcutta.*

My dear Sir,—So long a period has elapsed since you were kind enough to forward to us a collection of your indigenous birds, that I almost fear you may have forgotten the circumstance.

The packages, two in number, you entrusted to the care of Mr. G. Sandeman; but I am sorry to say, by what accident I know not, the first only reached us eighteen months after its shipment; and the second (containing specimens of aquatic Birds), only four months ago. The specimens contained in the first case received were truly gratifying, and will form a very desirable and pleasing addition to our Museum; but I regret to say that, from some uncommon mismanagement in the transit, the second case, when opened, was found to contain nothing we could make available. This we truly regret, as the subjects were very valuable and appeared to have been prepared with great care.

The Committee direct me to convey to you our most cordial thanks for your liberality and attention to us; and to assure you of our desire to reciprocate with you in the natural productions of our respective countries.

The circumstances of the times, which have pressed so severely upon the private interests of our colonists, have not been favorable to objects of a purely scientific nature; but even in the dawn of a more prosperous era, the desire to promote the interests of science has been peculiarly evinced in our legislative assembly, by a liberal grant having been passed during their last session, for the exclusive purpose of erecting a suitable building as a *Museum*, and it is now in the course of erection. I am also happy to say that the very general interest displayed by all classes in the success of this establishment, affords a well grounded hope, that the natural productions of this vast country, of all kinds, will soon be made acceptable for the advancement of science in every department of Natural History.

I would beg to explain to you, that hitherto our committee have had many and insurmountable difficulties to contend with. We have not had the advantage of any building in which our specimens could be properly displayed, or even adequately preserved. Under these circumstances it could not be expected that any great interest in the Museum would be evinced by the colonists; and although we have received, from time to time, many valuable contributions from individuals, we cannot boast of that general support of which we now feel confident. As a small return for your very liberal present, I am now directed to forward for your Museum, as per accompanying list, such specimens of our Birds, &c., as we have at our immediate disposal; but I am to assure you, that such as you have desired, which are not now sent, shall be carefully kept in mind, and, together with such others as we may consider will be gratifying to you, they shall be forwarded with the least possible delay. I entertain a hope that the recently established traffic in horses between this country and Calcutta, will afford us increased opportunities for communication. The recent discoveries of my friend Dr. Ludwig Leichardt, who has just returned from an overland journey from *Moreton Bay* to Port Essington, during which he discovered vast tracts of fine country closely bordering on the eastern Coast of Carpentaria, cannot fail of, ultimately, establishing a close connection between this country and India.

With regard to those objects of Natural History with which you might be able to favor us, our Committee desire me to say that while any thing you may send will be highly acceptable to our young Museum, yet we should be still more highly indebted for specimens of the larger Pachydermata and Carnaria peculiar to India, with the forms of which our younger population are quite unacquainted. Specimens of the Lion, Tiger, Bear, Rhinoceros, Elephant, &c., would attract general notice; for any of these you are so obliging as to send we shall be particularly grateful.

In order to secure greater attention to the package we are sending, I have had it handed over to the charge of the Chief Officer of the *Stratheden*, which vessel is freighted for the service of your Government and will sail in a few days. I send this letter by the "*Lloyd's.*" Pray look out for the arrival of the *Stratheden*.

I have also sent in the Box, a brief account of Dr. Leichardt's journey, drawn up

by himself, and printed here to afford immediate gratification to public curiosity. It will, I dare say, be interesting to your society.

Hoping to have the pleasure of hearing from you again,

I remain, my dear Sir, yours very faithfully,

ROBERT LYND,

Hon. Secretary to the Committee.

Australian Museum, Sydney, April, 1846.

Read the following letter from W. W. Bird, Esq. :—

TO HENRY TORRENS, ESQ., *Vice-President and Secretary, Asiatic Society of Bengal.*

SIR,—I beg leave to acknowledge the receipt of your letter dated the 7th of November last, forwarding to me a diploma from the Royal University of Norway, and to express a hope that as this high compliment has been paid to me in consequence of the proceedings of the Asiatic Society of Bengal, at a time when I had the honor of filling the office of President, the Society will do me the favor of communicating to the University my grateful acknowledgments for the same, and how deeply I feel the distinction conferred upon me by so flattering a mark of its approbation.

I have the honor to be, Sir, Your obedient Servant,

W. W. BIRD.

Paris, 21st April, 1846.

Read a letter from Captain Kittoe, enclosing a paper for the Journal and a memorandum relative to a singular custom at Lahore. It runs as follows :—

I send a few lines on a subject which I believe to be interesting to many of your readers. It is a hurried affair, as I have little leisure, and what I have is grudged. Saroda Pursad may make out the words of which I send *fac-similes*. They are, I expect, technical terms. The numerals are clear enough.—The memo. on the curious custom at Lahore (which I believe is an ancient Hindu one) may be acceptable. —I hope to send a paper on a curious discovery I made here [Shergotty] last year, of a Hindoo temple, 460 years old, with Cufic inscriptions, which no doubt have led to its being spared by the Mahommedans. A number of the inscriptions were chiselled out at Mr. Robert Neave's suggestion. There is a fine Sanscrit inscription there too, of which I have a copy and a translation.

The memorandum, forwarded by Captain Kittoe, is the following :—

Travellers are said " to see strange things," and justly so. The misfortune is few care to keep memoranda of them, and most dislike to repeat any thing that might seem marvellous or savouring of " a traveller's story." Nevertheless this silence is to be regretted, and I for one must break it and tell my story at the risk of repeating what may be already well known.

Lately when at Lahore, I observed in the outskirts of the city, in many places, horses' heads hung up by the nose on trees. On asking the reason of this, I was told that it is an olden custom, there, for suwars and others in whose care a friend may have left a horse, that if it died in his absence the head was cut off and thus suspended in order that, when he should return, it should be shewn to him in proof that it had not been stolen or otherwise made away with. The owner is taken to the spot and is told—"There, brother, is your horse's head; recognise it; it died; be satisfied."

K.

Read the following letter, dated 11th June, 1846, from Major Jenkins, with reference to Col. Low's wish to become possessed of authentic copies of Assamese characters (Journal Asiatic Society, vol. Proceedings).

With reference to your note of the 12th of May, enclosing a copy of a letter from Col. Low, requesting an alphabet of the Abom character, &c.—I have the pleasure to send you a note from Captain Brodie, who will, as quickly as possible, forward what the Colonel wishes for. I will ask Captain Brodie to send a few of the Boorunjees he alludes to, and which I have no doubt will be curious as showing the common dialect of about a million of Assamese; formed out of the corruption and mingling of Bengali, or whatever was the language of the old Kamroop kingdom, (the same I presume as what prevailed in Sylhet), and of the Shan language brought in by the Kooch Cacharees and Ahoms. The Assamese is now confined to Assam, but it probably extended down to Dacca and over all the Eastern parts of Bengal, wherever the Kolitas and Koches can be traced. The latter, beyond Assam, are now all Rajbunses, but the former are probably lost under the name of Koist. But in all the Eastern zillahs, the greater part of all the Bengalis of this class are probably only recently converted Koches, as we know that we are losing our Kolitas daily.

The following, dated 4th June, 1846, is Captain Brodie's letter, enclosed:—

I shall have much pleasure in doing my best to procure the alphabet, vocabulary and numerals, which the Asiatic Society require for Colonel Low. I have a memo. of the numerals in the Roman character, and they appear to be identical with the Siamese.

1. { Ling, or Loong.	4. See.	7. Cheet.
2. Sung.	5. Hañs.	8. Pet.
3. Sam.	6. { Rook, or Hook.	9. Kau.
		10. Cheep.

These correspond, many of them, exactly with the Siamese numerals found at page 55 of Low's Grammar.

The months are lunar and like the Chinese are counted by numbers; thus—*Den-ching*, the first month; *Den-kam*, the second; *Den-sam* (3), the third; *Den-see* (4), the fourth, and so on to the twelfth. The cycle of 60 years, called *Tew-singa* seems also of Chinese origin—the names of the years *(Laklee)* of it, being formed like the Chinese by a combination of a double series of terms; one of ten, the other of twelve. * * Our Abom scholars are disappearing every day, and the rising generation will not in all likelihood give many new ones. The tables at the end of the Boorunjee we had printed here give the numerals, the names of the months, the names of the years of the cycle, tables for finding the corresponding English year and the Indian Sak, in the Assamese-Bengáli character. Should these be of any use, I shall be glad to send ten or a dozen copies of the Boorunjee to the Society.

Read the subjoined letter, dated 5th June, 1846, from G. T. Lushington, Esq. (Almorah), accompanying the valuable paper to which it alludes.

I send herewith a register of the thermometer and state of the weather at Nynee Tal, in this Province, from April, 1845, to April, 1846, inclusive, and request that you will lay the same before the Society for insertion in their journal (should it be deemed worthy) in the name of Major General Sir W. Richards, K. C. B., by whom it was drawn up, and to whose kindness I am indebted for the copy now sent.

You are doubtless aware that a new hill sanatarium is rapidly springing up at Nynee Tal, and that by many of the residents and visitors there it is supposed to be equal in point of climate, scenery, and capabilities to the other hill stations; whilst at the same time it possesses an advantage not enjoyed by them, a deep and capacious lake, or rather lakelet, on which amateurs in rowing and sailing find ample amusement.

The distance from Nynee Tal to the foot of the hills is about eight miles, and to Moradabad (the nearest station) is fifty-nine.

The thanks of the Society were returned for the contribution.

Read a letter, dated 10th June, 1846, from J. Thornton, Esq., Secretary to the Government of the North West Provinces, announcing the transmission to the Society, for publication in its journal, of a summary of Major Cautley's project for irrigating the Doab from the Ganges, drawn up by Captain Baker of the Engineers, together with the plans which accompanied it.

Ordered that the special thanks of the Society be returned for the valuable paper communicated, which is referred for insertion in the journal.

The Kallinjur Cave-temple inscriptions and Ensign Maisey's drawings illustrative of the temples themselves, were then exhibited to the meeting; after which was read the following letter from the Hon'ble J. Thomason to the Secretary; dated 5th June, 1846.

I have now the pleasure to send you the *fac-simile* of the Callinger inscription, deciphered with the assistance of Kewul Ram (the College Pundit) and translated. The reading may be questioned in some places, but the inscription is of no value, save that being in the Kutila character, (Journal Asiatic Society, Vol. VI. p. 779 and Vol. VII. p. 276,) it was probably engraved about the tenth century, A. D. The mode of taking off the *fac-simile* is good, and I hope we may be better rewarded next year.

The first report, a provisional one, of the Sub-Committee of Finance was then read, as follows :—

First Report of the Finance Sub-Committee.

The Finance Sub-Committee, appointed at the Meetings of May and June, having met on two occasions, have now the honour to report, provisionally only, (as much of the information which they require is wanting, but mostly in preparation) as follows :—

It was reported to the Society at the last meeting that the Accounts and Vouchers had unfortunately been lost after the death of the late Mr. Robison.

These, they are happy to say, have been recovered, but so late that they were only replaced in the hands of the Sub-Committee at its first Meeting on the 22d of June.

The Sub-Committee elected the Rev. Dr. Hæberlin, *Chairman*, and Capt. Marshall, *Secretary*.

1. The Sub-Committee having examined the accounts for the years 1843, 1844 and 1845, report them correct.

2. *Resolved*, that the accountant of the Society be directed to prepare without delay for the Sub-Committee, an abstract of the Accounts of the Society's Funds for 1842, 1843, 1844, and 1845, in the same form as that for 1841, contained in the Journal, No. 122, at page 198.

3. The Sub-Committee find, that on the 31st Dec. 1841, there was a balance in favour of the Society of Co.'s Rs. 19,516-1-9, that on the 31st Dec. 1845 there was due from the Society to the Treasurer Co.'s

Rs. 134-12-9, liabilities Rs. 9,102, and that there was Company's Paper in hand, in amount Rs. 13,066-10-8.

4. They further find that the average annual income from every source, for the last four years up to the 31st Dec. 1845, has been about Co.'s Rs. 24,000, the average annual expenditure for the same period has been about Rs. 25,500. The items of the above annual income and expenditure are as follows: viz.

INCOME.

Government Allowances.

1. Oriental Publications	6,000	0	0			
2. Curator of Museum	3,000	0	0			
3. Preservation of Subjects	600	0	0			
4. Economic Geology	3,000	0	0			
5. Contingencies for do.	768	0	0			
6. Oriental Library	936	0	0			
				14,304	0	0
Contributions from Members				7,500	0	0
Sale of Books, &c				2,200	0	0
			Total Co.'s Rs.	24,004	0	0

EXPENDITURE.

1. Oriental Publications	1,267	0	0			
2. Museum	6,000	0	0			
3. Economic Geology	3,600	0	0			
4. Library	4,200	0	0			
5. Secretary's office	3,000	0	0			
6. Journal, Printing and Sundries	7,500	0	0			
			Co.'s Rs.	25,567	0	0

5. It will be seen from the above details of our income and expenditure, that the Government entrust to us Rs. 14,304 per annum for specific purposes, and of course it is the duty of the Society to apply the various sums to the definite objects for which they were granted. But it appears that under the head of Oriental Publications, we received from Government Rs. 6,000 per annum, whilst our expenditure in that department only reached about Rs. 1267 per annum, whereas in the Department of the Museum we received from Government Rs.

3,600 per annum whilst our average expenditure was Rs. 6,000 per annum.

6. The Sub-Committee beg to bring to the especial notice of the Society, the following communication regarding Oriental publications from the Secretary to the Government of Bengal, dated 20th June, 1838, and which is recorded in our Journal of June, 1838, pages 556 and following, viz :—

To JAMES PRINSEP, ESQ. *Secretary Asiatic Society.*

SIR,—With reference to your letter to this department, dated 21st September, 1835, and to the reply dated the 30th of the same month, I am directed by the Honourable the Deputy Governor of Bengal to transmit, for the information of the Society, the accompanying copy of a letter, No. 8, of 1838, from the Honourable the Court of Directors, in the public department, dated the 28th March, and of its enclosures; and to state that the sum of 500 Co.'s Rs. per month, has from the 18th June, the date of the receipt of the despatch, been placed at the disposal of the Asiatic Society, for employment in the manner indicated by the Honourable Court. The amount will be made payable monthly from the General Treasury on the bills of the Secretary of the Society, countersigned by the President and duly audited, and at the close of each year, an account must be rendered, shewing the manner in which the amount has been expended.

I am, &c.

(Signed) H. T. PRINSEP,

Secy. to the Govt. of Bengal.

Fort William, the 20th June, 1838.

The Sub-Committee beg to recommend, in accordance with the specific terms contained in the above communication, that the Secretary of the Society be desired to draw up an account-current of the receipts and expenditure of the Oriental Publication Fund, from the commencement to the present time, as no such documents appear to have been regularly furnished. As far as the Committee can ascertain, it would appear that up to the beginning of the present year, the balance for the purpose of the fund, not expended, and which ought to be in our hands, amounts to not less than Rs. 25,000.

7. On a mature consideration of the financial position, the various operations and obligations of the Society, the Sub-Committee would beg strongly to recommend to the Society that the following scale of Expenditure for the various objects specified should be immediately adopted and strictly adhered to, viz :—

1. Oriental Publications	500	per	Mensem
2. Museum (Zoological)	350	,,	,,
3. Economic Geology	350	,,	,,
4. Secretary's office and Library	350	,,	,,
5. Journals, Researches and Printing	350	,,	,,
6. Contingencies	100	,,	,,
Total Rs.	2,000	,,	,,

or 24,000 per annum

(Signed) J. HEBERLIN, *Chairman.*
R. W. G. FRITH.
JOHN MCQUEEN.
J. WARD.
G. T. MARSHALL, *Member and Sec.*

It was resolved that the report be received and adopted generally. With regard to the suggestion relative to assigning a definite sum to the expenses of each department, it was proposed by G. A. Bushby, Esq. seconded by B. Colvin, Esq. and unanimously resolved—

That the Sub-Committee be requested to receive from the heads of the various departments under the Society, a report of the manner of application, as respects the sums assigned to them, in their several sections, leaving the Sub-Committee to consider and report on them to the Society.

Read the subjoined proposal by Dr. Hæberlin on the propriety of publishing the *Smritis*, among the Society's Oriental collection.

Proposal to print the Smritis.

Next to the Vedas, *the ancient Smritis*, or Dharma Shástras, deserve the attention of the learned. The treatises, now extant under that name, are generally ascribed to the sages, who throughout the Hindu Literature, in ancient and modern times, are not only represented as the progenitors of the Hindu race, but who from the beginning of the people appear to have directed the social and religious, as well as the political developments of the national mind.

Most of the writers of the Smritis are likewise mentioned as the authors of considerable portions of the Vedas; and both classes of their writings bear the clearest traces of antiquity on their foreheads. The very high antiquity of the Smritis, as a whole, considering that many of them must have been composed at least 3,000 years ago, would claim, on this very account, our best attention.

But when it is considered that on the foundation of these treatises is laid the entire, most complicated and most astonishing system of Hinduism, which has out-

lived the mutations of Society, and seems even till now to have grown stronger under oppressions from without; when it is considered that down to this hour the maxims of law first adopted, or devised, by the ancient sages of the Hindus, still regulate, more or less, the civil jurisprudence of more than 100 millions of people; it appears not only natural that we should wish to become fully acquainted with the ancient sources, whence such a mighty river has sprung, but it is surprising that so little is known as yet, respecting these writings.

Yájna Valkya, himself one of the number, counts twenty ancient lawgivers, whose treatises are still extant; in the Padma Purána and later writings, 36 are mentioned; but the entire number exceeds forty.

Now of all these works, as ancient most of them as the Vedas, and so important in various ways, *two* only have found their way into the hands of the literati. *Manu* and *Yájna Valkya*, (the latter, however, only in the Mitákshará, a comment on the original text) have been printed in the original Sanscrit; all the rest are scattered about in manuscripts.

The object of this short notice is to draw the particular attention of the Asiatic Society to the ancient Smritis; and to propose, if it shall meet the approbation of the Society, to print the entire body of the "Dharma Shástra" or Smritis, with the exception of Manu, sufficiently well known, and two or three other treatises, which latter, indeed, bear the name of Smritis, but the external evidence of which clearly shows them to be of a much later date than the others, and to incorporate too many pauranic elements, for their claim to antiquity and originality to be admitted.

It is supposed that all the works it is meant to publish in the original, about 30 in number, could be compressed into two 8vo. volumes.

In the arrangement which I propose to follow, the order observed by Yájna Valkya, as far as it goes, would be adhered to.

I would only, further, mention, that having already translated nearly one half of the works I would propose to publish in Sanscrit; I might hereafter, perhaps, be able, if it should appear desirable, to publish a literal version into English of all the treatises, with critical and historical notes, introductory to the several works, and elucidatory of their contents.

Calcutta, July 1st, 1846. J. HÆBERLIN.

Ordered that the proposal be referred to the consideration of the Committee of Papers.

Owing to the lateness of the hour, the meeting broke up without receiving the reports of the Curators. The Geological Curator, however, handed over to the Secretary the following reports of a former month, which owing to some oversight remained hitherto unpublished.

Report of the Curator Museum Economic Geology and Mineralogical and Geological Department.

Geological and Mineralogical Department.

The specimens and shells announced by Lieutenant Sherwill from the fresh water deposit near Benares have reached us and are on the table.

Economic Geology.

Mr. J. Ellis, of the Commissariat Department, has presented us with a bag of the remarkable gem-sand of the Ava river. I learn from the jewellers that this is often brought to Calcutta and sold in large bags at very low rates, the greater part of stones being utterly valueless for them, though really gems. It appears to contain a numerous variety, some crystallised, but most fragments or rolled crystals of every thing, from spinelle rubies, with probably sapphires, corundums, cinnamon stones, beryls, agates, garnets, &c., down to smoky quartz; but it is a long labour to find a specimen worth putting aside, and perfectly useless to go through the labour of discriminating them till the whole is picked. It is in fact more curious as a mixture than separate specimens would generally be.

I present two reports, one on the Cerium ore sent by Captain Newbold, and the other on the ore of Antimonial Galena forwarded by Colonel Ouseley from Hisato, Chota Nagpore.

The following is an extract from a letter from Lieut. Blagrave, Scinde, to whom I had written again on the subject of the sulphur deposit of Kurrachee, reported upon to Government in September, 1843, but of which we had heard nothing:—

"I sent off three boxes of fossils the other day to you, in one of which were specimens from the sulphur bed at Kurrachee, but which I fear will not turn out so good as expected. The report that was sent in by the Bombay Government gives a percentage of 30 or 40 per cent. I forget exactly the quantity stated, and by a trial made at Kurrachee with very indifferent means the result was little above 30 per cent. Will you kindly have the different specimens that I have sent analyzed, and let me know the exact quantity of sulphur yielded by each. I wrote, I think, on each, the different depths at which each was found. Among the specimens sent there are lumps of mould filled with a white flaky substance, I should like to know what it is. I have just seen the sulphur springs at Luckee, and collected a whole basket full of specimens, of which I will send you samples when I have more leisure. The springs are situated among, I think you would call them, limestone rocks, but *that* you will be able to judge of from the specimens of the rocks when they reach you. I shall try also to obtain a sketch of them for you, as the strata are curiously jumbled together; the bed of the streams from the springs are covered with bright green and red (I first thought deposits) but afterwards found that the green was a sort of lichen, and the red, small animalculæ. Some of the stones are covered with crystals of sulphur and some with melted yellow sulphur; the temperature of the highest spring is only 105° and the lowest 102°, at least that was what it stood at when I visited them. The stones near and in the water courses are covered with a

white yellow and bright orange crust, in feel like the white sugar on an old cake, a slight crust outside but not inside. I will send specimens of it, and if I have time a paper describing them more fully.

"I forgot to mention that Meer Nusseer Khan had tried to turn the sulphur at Luckee to account, and expended a considerable sum of money in the attempt, but only got a few maunds of sulphur, the natives say, for the large sum of money expended; but that might have been owing to the faulty system adopted. You will be enabled to judge the true percentage when the specimens reach you."

We have to acknowledge the receipt from Government of a copy of the Revenue Survey map of the Midnapore District and of a skeleton map of the Hajeepore and Balagutch Dearuhs, Zillah Patna.

From Mr. J. Weaver, of Cossitollah, we have received a very beautiful specimen of iron spar (carbonate of iron), shewing the crystallisation and the rough spar, with its appearance as an ornamental material.

Examination of an ore of CERIUM *from Southern India by Captain J. T. Newbold, Assistant Commissioner, Kurnool, Madras Territory. By H. Piddington, Curator Museum Economic Geology.*

This ore was found by Captain Newbold in the central range of the Eastern Ghauts, between Curnum in Cuddapah and Gogarpilly in Kurnool, a little south of the Nundi Cunnama pass; he describes it—and I give his description first as being that of an accurate and experienced observer, and as conveying the impression it makes at first sight on the Mineralogist—as "A light-reddish and fawn to peach coloured matrix, which has sometimes a glimmering lustre like that of *Lepidolite*: hardness about 6.0 *Moks*, but often hard enough to strike fire with steel, where it appears to pass into chert, which also appears in the vein stuff. The fracture is evenly granular, inclining to splintery, streak faint pink or reddish white, opaque."

This specimen, sent to the Society, I should thus describe as to external appearance. It is a massive matrix, mixed with bluish and greenish white chert, with nests and brief veins and specks of galena, so interspersed through it that it is impossible to procure any notable quantity free from some intermixture without perhaps destroying the specimen. Its colour varies from a light tile red, through light-orange and pink-red, to a whitish-red orange; the weathered surface would be, judging from the little we possess, dark-red brown, with perhaps reddish-white veins, but always dull.

The fracture is granular and somewhat splintery, glittering in some places, and is thus like a fine-grained red sandstone; here and there are nests of an orange brown colour with some appearance of crystallisation, like the fine varieties of carbonate of iron, which they may possibly be. I could not so much disfigure our single specimen as to pick out enough for examination.

The fracture is evenly granular and perhaps may incline to splintery, as Captain Newbold observes; but there is no fair opportunity of judging of fracture in chipping off minute bits for analysis.

The few fragments I obtained were angular.

The mineral is opaque, the streak a dirty white inclining to orange-grey. It does not soil. The hardness of the purest mineral I find to be 5—6 as compared with Apatite and Adularia.

It is rather tough and there is a slight adherence to the tongue. It feels meagre and cold; the specific gravity is very uncertain, and, in truth, no datum at all, for the mixture of galena and chert is so considerable that we have no piece which would give even an approximation to the correct determination of this character. It rings a little, I think, when struck with the hammer, and when breathed on gives a strong clayey smell. When pounded it is easily reduced to an impalpable powder of a yellowish-fawn or rosy-buff colour.

Blowpipe Examination.

A portion of the darker red crystallised part *in the forceps* changes to a bright chocolate brown, with a slight metallic or slaggy lustre in some parts, but does not fuse—

On charcoal it takes a greyish brown colour with a whitish dust about it in some places—

The powder fused with Soda on charcoal gives bright spots, and on Platina wire effervesces and spits sharply. In the reducing flame, a dull, dirty greenish white bead but nothing reduced from it—

With Borax on platinum wire in small quantities a clear glass; with more of the mineral, a light clear emerald green glass, both in the reducing and oxidating flame, which cools to almost a colourless one when quite cold—

With Microcosmic salt on platina wire infusible; when borax is added fuses to a light green yellowish-white bead, becoming quite opaque and much less coloured when cold.

Via Humida.

The mineral was found soluble with much effervescence in all the mineral acids, but acetic acid had no effect upon it.

The acid solutions, particularly that with sulphuric acid, gave abundantly with potass the characteristic gelatinous and semi-crystalline precipitate of cerium; and it was found by the usual tests that it contained moreover iron, sulphuret of lead, and lime, besides the usual accompaniment of silex and traces of alumina.

It was dissolved in sulphuric acid, which took up the iron and cerium only, and left the lead and lime as insoluble sulphates. No fluorine was detected by this or by the blow pipe. The solution was almost neutralised by ammonia, and the iron and cerium thrown down by benzoate of ammonia. It had been previously ascertained that the benzoate of cerium was highly soluble, and thus when the mingled benzoates were thrown on a filter they were easily separated by washing; the insoluble benzoate of iron remaining on the filter. The benzoate of cerium was found to crystallize in acicular plumose crystals, forming thin broad feather-like tufts and groups.

The oxide of cerium was also obtained independently by Laugier's process, as given in the last edition of Turner's Chemistry, so as to leave no doubt of its identity.

The mineral thus appears to be a triple carbonate of iron, lime and cerium, the mixture of galena being merely fortuitous and visible to the naked eye. I assume the combination of the three first to take place, as they are usually found in the common cerite, which our mineral probably is. It is certainly none of the fluates of this mineral.

I have not yet been able to ascertain if the combination is in definite proportions, but I think it not improbable that the orange brown nests alluded to are the crystallised mineral.

Report on the ore of Lead and Antimony sent by Lieutenant-Colonel Ouseley from Hisato, Chota Nagpore.

Lieutenant-Colonel Ouseley, at my particular request, has sent not only the ore in large lumps, but also specimens of the rock matrix, and other rocks and minerals found in the neighbourhood of this vein, and all these I have carefully examined, so that nothing of importance could, I think, escape us.

1. Judging from the masses we have, which are tolerably large, the vein appears to be composed of crystalline quartz in a few places, and in and near this the ore appears purest, but the greater part is an opaque, granular, and loosely aggregated quartz, mixed up with innumerable masses of crystals and grains of the antimonial galena, with minute masses and cubes of common sulphurets of copper and iron, and in some few places of white iron pyrites.* The silex in many parts is deeply tinged with iron, and sometimes almost assumes the appearance of Bronzite from the ferruginous impregnation.

It was evident that such an ore and matrix *might* contain silver in quantities worth working, and also that if care were not taken to take good averages, and these from various parts and separate specimens, the silver might be overlooked. Thence has arisen the necessity for close and repeated examination of all the various parts of the ore to be well assured we were not overlooking what we were seeking for; since from the distance of the vein from all roads and rivers it is only as an argentiferous ore that it could have any value.

For the same reason all the other ores and earths near the matrix have been carefully examined. They are as follows:

Black scaly mica, and micaceous earthy matter.

Brown iron ore, and ferruginous earths of several kinds.

Jaspery iron ore in bands.

Red and Yellow Ochre.

Greenish Clay.

* These last mostly occur in the neighbourhood of a few nests of rhomboidal limestone which are found in the quartz.

2. The pure ore is in the usual pseudo cubic and cubico-laminar masses and fragments. By the common goniometer the angles of the best fragments, perfectly bright and pure, which I could pick out, were 88° on 92° and the faces were evidently slightly curved.

The specific gravity of a good crystal, water-worn, but with all impurity carefully washed from it, was..... 7.46

Of a bright mass from the lumps, which however might retain a little air.. 7.51

Mean, 7.485

Thomson gives 7.53 to 7.65 for galena, but according to Vauquelin it may vary from 7.10 to 7.60, and thus specific gravity is evidently an uncertain character, especially where, as in this ore, antimony and silica and silicate of iron form considerable proportions.

3. Before the blowpipe it does not decrepitate and fly, but melts and disengages bubbles; gives a bright but dark-coloured steel-grey metallic bead with little bubbles on its surface; smokes when roasting, and the charcoal has the bluish gray deposit of the antimonial ores. By continuing the reduction it becomes a bright tin-white and highly malleable bead, giving then the dull yellow powder of oxide of lead on the charcoal as the bead diminishes. The closest and often repeated investigations could discover no trace of silver or arsenic. Iron, bismuth, lead, antimony, sulphur and silica were the only constituents of the purest ore; the bismuth also in very small quantities.

4. The results of several analyses made on various proportions of the purer and impure portions, and in large averages of 1000 grains, that nothing of value might be overlooked, gave always the same results as to constituents, and the absence of silver; with now and then a trace of copper from the copper pyrites already noticed as occurring in the matrix.

The picked and purest ore contains per cent.—

Water (Hygrometric),		2.50
Sulphuret of Lead (Galena), (giving Metallic Lead,	47.02)	54.50
Sulphuret of Antimony, (giving Metallic Antimony,	4.7)	17.00
Oxide of Iron,	4.00	25.50
Silicate of Iron,	21.50	
Bismuth trace,		0.00
		99·50
Loss,		0.50
		100.00

There can be no question that this vein should be followed to see what changes of ores, if any, take place. It is almost positively mischievous to publish the exa-

minations of these mere surface specimens, for they may create an idea that a vein is worthless which is, on the contrary, a rich one at 50 or 100 feet deep. The best mines in many parts of the world are capped by poor ores, and sometimes of a different kind, and those almost worthless. The capping of copper by the common Blende or "Black Jack" is a familiar instance, and has even grown into a semi-proverbial saying in Cornwall, where the miners think it a favourable indication when sinking a shaft for copper, to find plenty of Blende (Sulphuret of Zinc) "for," they say, "*Black Jack rides a proud Horse.*"

For all presentations and communications the thanks of the Society were accorded.

The ordinary meeting for the month was held, as usual, at the Rooms on Wednesday, the 2d September, at half past 8 P. M.

Lieut. Col. Forbes, V. P., in the chair.

The minutes of proceedings of the July meeting were read, confirmed and ordered to be published.

E. A. Samuells, Esq. (C. S.) and Alexander Mitchell, Esq., proposed at the July meeting, were duly elected members.

The following gentlemen were proposed, for ballot at the next meeting:—

James Colville, Esq., Advocate General, proposed by the Honorable Sir Henry Seton, V. P., and seconded by the Secretary.

G. R. Wilby, Esq, proposed by Mr. Heatly and seconded by the Secretary.

W. Knighton, Esq. proposed by Mr. Piddington and seconded by the Secretary.

Dr. Young, proposed by Mr. Blyth and seconded by the Secretary.

James Dodd, Esq., proposed by Dr. W. B. O'Shaughnessy and seconded by Col. Forbes.

W. Grey, Esq. (C. S.) proposed by Mr. Welby Jackson and seconded by Col. Forbes.

A recommendation from the Committee of Papers was read, proposing that Mr. D. H. Williams, the Geological Surveyor to the Government of India, be elected a Corresponding Member of the Society.

The proposal being put, and duly seconded by Mr. J. Ward, was carried by acclamation.

Read the following list of additions to the Library during the last two months.

Presented.

1.—Meteorological Register for the months of June and July, 1846.—By the Surveyor General's Office.

2.—Meteorological Register kept at Kyouk Phyoo, for June and July, 1846.—By the Superintendent of Marine.

3.—The Calcutta Christian Observer for July and August, 1846.—By the Editors.

4.—The Oriental Christian Spectator for August, 1846.—By the Editor.

5.—The Quarterly Journal of the Geological Society, vol I. for 1845, and Nos. 5 and 6 for February and May, 1846.—By the Society.

6.—Travels of Evleya, part II.—By Oriental Translation Fund.

7.—Haji Khalfae, Lexicon, Arab. et Lat.—By the Oriental Translation Fund.

8.—Memoirs of the Royal Astronomical Society, Vol. XV.—By the Society.

9.—Notices of Persian Poets, by the late Right Hon'ble Sir Gore Ouseley, Bart., by the Rev. J. Reynolds.—By the Oriental Translation Fund.

11.—The Journal of the Royal Asiatic Society of Great Britain and Ireland, No. XVI. part 2.—By the Society.

12.—The Report of the British Association for the advancement of the Sciences, for 1845.—By the Association.

13 —Natural History of New York, part I. Zoology, by James E. DeKay, 5 vols.—By the State of New York.

14 —Natural History of New York, parts III. and IV. Geology, by W. W. Mather. Lardner, Vanuxem, Lewis C. Beck, James Hall and E. Emmous, 5 vols. and 1 map.—By the State of New York.

15.—Jahrbücher der Literatur, January to December, 1845, Nos. 109, 110, 111 and 112.—By Baron Von Hammer Purgstall.

16.—Monographie des Poissons Fossils du Système Devonien (old red sand stone) par L. Agassiz, 1845.—By the Author.

17.—Ditto ditto, Du vieux Gres Rouge, par L. Agassiz, 3me Livraison 1845. —By the Author,

18.—Bulletin de la Société de Géographie, Troisième Série, Tome IV.—By the Society.

19.—Antiquarisk Tidsskrift, Bulletin de la Societe Royale des Antiquaires du Nord, 1843 and 1844, 2 vols.—By the Society.

20.—Moore's Indian Appeal Cases, 6 Nos.—By the Government.

21 —Extract from a Report on the District of Babriawar, by Capt. G. Le Grand Jacob.—By Government.

22.—Report upon the General Condition of the Province of Katteewar, by Capt. Jacob.—By the Government.

23.—Transactions of the Medico-Chirurgical Society for the year 1845-6. vol. I.

24.—Journal of the Ceylon Branch of the Royal Asiatic Society, vol. I. part I. 5 copies.—By the Secretary to the Society.

25.—Commercial Annual for the years 1844, 45 and 46, by E. Wilkinson, Esq. 1 copy —By the Author.

26.—The History of the Kings of Assam, 8 Pamphlets.

27.—A Map of Poorce, or the Southern Division of Cuttack.—By the Government.

PURCHASED.

Journal des Savans, January to May, 1846.

The North British Review, No. IX. May, 1846.—5 Nos.

Annals and Magazine of Natural History, including Zoology, Botany and Geology, vol. XVII. No. 114. June, 1846.

Illustrations of Indian Ornithology, by S. C. Jerdon, Esq. April, 1846, 2 copies.

Fauna Antiqua Sivalensis, being the Fossil Zoology of the Sewalik Hills in the North of India, by Hugh Falconer, M. D., F. R. S. F. L. S. F. G. S. and Proby

T. Cautley, F. G. S., Letter Press, part I. 3 Nos. and Illustrations, part I 9 Nos.

The Birds of Australia, by J Gould, F. R. S. part XXII.

Exchanged.

Journal Asiatique, quatrième série, Tome VII. Nos. 32 and 33, March and April, 1846.—2 copies.

Calcutta Journal of Natural History, No. 21, April, 1845, and No. 26, April, 1846.

The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, third Series, Nos. 188 and 189, May and June, and No. 190, Supplement vol. XXVIII.

The Athenæum, Nos. 967 and 968, May 9th and 16th.

The Second Report of the Sub-Committee of Finance, being presented to the chairman, was then read.

Second Report of the Sub-Committee of Finance of the Asiatic Society of Bengal, 3d July, 1846.

The Finance Sub-Committee appointed at the Meeting of March 4th, and June 3d, have now the honor to report as follows:—

1. The Sub-Committee find, that some members of the Society have failed for longer or shorter periods to pay their subscriptions, they therefore recommend that these members be reminded of their obligations.

2. The Sub-Committee called upon the Heads of Departments, according to a Resolution of the last meeting of the Society, to state in detail the manner in which they proposed to arrange their establishments with reference to the limited expenditure fixed by the meeting, at the suggestion of the Sub-Committee. The Secretary of the Society (Mr. H. Torrens) stated, that his successor must arrange the establishment of the Library and the Secretary's Office, as he (Mr. Torrens) had resigned. The Curator of the Museum of Economic Geology (Mr. Piddington) gave in a detailed statement of his department, amounting to the sum prescribed, which was received as satisfactory. The Curator of the Museum (Mr. Blyth) stated that the business of the Zoological Department, including his own salary, could not be carried on upon the sum fixed. The Sub Committee have received a letter from Mr. Blyth respecting his claims on the Society and on the subject of his department generally, which document they beg to submit for the consideration of the Society.

3. In the third paragraph of their First Report, the Sub-Committee stated, according to the information then before them, that the liabilities of the Society amounted to Co.'s Rs 9,102, the chief item of which was Rs. 7,000 for printing the Society's Journal up to No. 162 at the Bishop's College Press. They now find in consequence of enquiries they considered it necessary to institute, that this item should have been only Co.'s Rs. 4,019 11 0. This discrepancy appears to have originated in the circumstance of the accounts of the Journal of the Society for the three years ending 31st December, 1845, exhibiting the former item instead of the latter, evidently arising from the charges for the Journal before it became the Society's property, being accidentally mixed up with those incurred since it became so. In the course of these enquiries they also found, that the total receipts for subscription to the Journal since it became the Society's property up to the 1st July, 1846, amount to Rs. 5,355 8 0, giving about 2,000 per annum additional income on account of the Journal. They have therefore much pleasure in announcing to the Society, that they can recommend 1,500 Rs. per annum or 125 Rs. per mensem to be allotted to the department of Journals, Researches, and printing, and Rs 500 per annum or about Rs. 42 per mensem to the Zoological Museum, in addition to the sums agreed upon at the last meeting of the Society, as contained in the 7th paragraph of their First Report.

The revised scale of expenditure, if approved by the Society, will now stand as follows :—

	per mensem.			per annum.		
1. Oriental Publications	Rs. 500	0	0	61000	0	0
2. Museum (Zoological)	392	0	0	4,700	0	0
3. Museum of Economic Geology, Mineralogical and Geological Departments	350	0	0	4,200	0	0
4. Secretary's Office and Library	350	0	0	4,200	0	0
5. Journals, Researches and Printing	475	0	0	5,700	0	0
6. Contingencies	100	0	0	1,200	0	0
Total Co.'s Rs.	2,167	0	0	26,000	0	0

(Signed) J. Hæberlin,
R. W. Frith,
J. McQueen,
J. Ward,
G. T. Marshall,

(True copy.)
H. Torrens, *V. P. and Secretary.*

Asiatic Society's Museum, July 17th, 1846.

My dear Sirs,

I beg to acknowledge the receipt of your note of yesterday's date, requesting information for the Society's Sub-Committee of Finance as to whether the expenses of the Zoological Department of the Museum can be brought within 350 Rs. per mensem.

With every disposition to carry out the wishes of the Sub-Committee, I cannot but remark in reply, that I consider such an arrangement to be impracticable; if only that my own very moderate salary of itself more than covers that amount.

It will be remembered that from May 1st, 1844, an increase of 100 Rs. per month was granted me, to be paid with arrears when the letter-press to accompany the publication of Burnes's drawings should be ready for printing; and I leave you to judge, therefore from the fact of the present accumulation of those arrears, how exceedingly I require *further assistance* in the Museum, to be enabled to discharge efficiently all the duties of my office.

That office requiring the whole undivided energies of the person holding it, is therefore *incompatible with any other appointment:* hence what salary I receive I must derive from this one source only; and with no sort of promotion in view, it must be acknowledged to be but a poor remuneration for the laborious occupation of the entire time of an educated European in this climate. Nought but devotion to Science could continue to reconcile me to it, whatever may be its non-pecuniary contingent advantages.

I would next remind the Sub-Committee, with all respect, that on my being deprived of the great advantage of personal residence at the Museum, it was thought but just to grant me compensation for the increased personal expenditure which the new arrangement entailed upon me: but the amount of that recompense is still under consideration, with six months of it due at the present time.

Passing now to the consideration of the subordinates employed in my department, I can only repeat the statement, which I have before had occasion to make, by again urging that the present establishment is not merely at its extreme minimum, compatible with efficiency, but *considerably below that standard.* Our establishment is not nearly adequate to the amount of work required of it, and the consequence is that arrears are at this time accumulating. With an extensive collection of valuable skeletons in store, scarcely one has been mounted upon wire for the last three years; other sub-departments under my superintendence become unduly neglected; my time is continually taken up with drudgery; which might and ought to be performed by additional assistants,—to say nothing of the incessant application which it involves on my part; and what is personally most of all annoying I feel how much more I could accomplish for the Society with the necessary humble aid, which the bestowal of an additional 50 Rs. monthly would place at my disposal.

Under these circumstances, I can suggest no alteration between at least continuing the existent establishment in the Zoological department of the Society's Museum

and that of suppressing it altogether in its present most flourishing condition: as it is, the indifference of our countrymen generally to Scientific Natural History is matter of deserved reproach with all civilized foreigners to this day. Oxford nor Cambridge can boast of a chair for Zoology among its Professorships; and during the brief period that the French held sway in Egypt, more was done towards the investigation of the natural productions of that country, far more than has been even yet accomplished for India. I had hoped to effect something that should at least contribute to remove this stigma from our nation, and have thought myself entitled to look to the Society to second my exertions to carry out the objects of my curatorship, at any rate to afford due scope for the exercise of such abilities as I may possess, and grant me the chance of earning all possible reputation that should compensate in some degree for the insignificance of my pecuniary allowances.

It is to be remarked that the contingent expenses of the Zoological department of the Museum, have certainly not increased in the ratio of its developement; but on the contrary have decreased for the last two years and more, from the considerable diminution of the number of purchases of specimens. What few indeed are now brought, in the bazar or of Shikarees, are almost wholly with a view to supply other Museums with specimens, in return for the contributions we receive of desiderata for our own; and it will be admitted that money can scarcely be better spent than in such intercourse. It is chiefly by the present system of active correspondence with working naturalists that our collections have been advanced to their present highly prosperous condition; and it is only by adhering to that system that a continuance of the same success can be assured to us.

By dint of no small labour and perseverance a very extensive system of correspondence both within and out of India has been gradually established, to the results of which our collections bear almost daily testimony, but we only begin to reap the advantages of that intercourse, and a more inauspicious time for checking the furtherance of its objects by the withdrawal of the funds necessary for that among other purposes can scarcely be than just at present.

In conclusion I must repeat that the establishment is already at its minimum compatible with ability, and that in my humble opinion no retrenchment can be made in its expenses without much more than commensurate detriment to the Society's Museum, and obstruction to the objects for which in part the Society was originally constituted.

Believe me, my dear Sirs, ever truly your's,

(Signed) E. Blyth,

Curator Zoological Museum,

(True Copy.)

H. Torrens,

V. P. and Secretary.

Capt. Marshall, *Secretary Sub-Committee Finance Asiatic Society,*

Sir,—In reply to your letter I beg to say that understanding the Society to appropriate as follows, 36 Rs. from its own funds, i. e. Government allowance for the

Museum of Economic Geology Curator	250	0	0
Contingencies,	64	0	0
	314	0	0
From Society for Geological and Mineralogical Departments	36	0	0
Total Co.'s Rs.	350	0	0

I can only as before, continue with the same establishment as sanctioned by Government, viz :—

Sircar and Writer, who is also assistant (as far as he can be so) in making Catalogues, marking and arranging specimens,&c. &c.	16	0	0
Carpenter, who also polishes and cuts stones.	8	0	0
Punka Boy	2	0	0
Peon for letters, &c. &c	5	0	0
Co.'s Rs.	31	0	0

It will be noted that these persons are all employed for the 3 Departments, though paid for by the Economic Geology, which is scarcely fair to Government, but which can not be avoided. I make the bearer and Punka boy and Carpenter, and at times the Sircar, assist also in the Laboratory !

From the Government Allowance of..	64	0	0
Take this	31	0	0
Leaves for Books, Chemical, and agents and all other contingencies for Museum Economic Geology only	33	0	0
Add Society's Allowance	36	0	0
Co.'s Rs.	69	0	0

I have a bearer who keeps every thing clean below and attends to the windows, doors, &c. as well as assisting those upstairs. He is now become very intelligent and handy in the laboratory also. He has hitherto been paid by the Society, but I suppose it must be necessary to pay him from my department, on which the Committee will decide.

The sum of 69 Rs. I need not remark is really not much more than the expenses of the laboratory very carefully managed would amount to in this country, where every thing is so absurdly expensive which relates to Chemical pursuits; and there are books, specimens, postages, freights and a host of smaller charges besides, as will be seen by the accompanying books which I send for the inspection of the Committee, being the petty account books of the Departments for 1845-46, but

which do not include books and some bills paid by the Secretary's department direct which will bring the whole to the amount allowed by Government.

I am, Sir, Your obedient servant,

(Signed) H. Piddington,

Curator Museum Economic Geology.

(True Copy.)

H. Torrens,

V. P. and Secretary.

Calcutta, 17th July, 1846.

After considerable discussion, it was proposed by Mr. J. Ward, seconded by Mr. E. B. Ryan and carried—

That the Reports of the Finance Committee be laid on the table for the perusal of the Society for the period of a month.

A recommendation from the Committee of Papers was read, to the effect, that the acquiescence of Dr. W. B. O'Shaughnessy having been obtained to the arrangement of associating him in the Secretariat of the Society, as the colleague of Mr. Torrens, if that arrangement were acceptable to the General Meeting, the Meeting do approve of it.

In accordance, it was proposed by the President, seconded by Mr. B. J. Colvin, and resolved, that the Society does approve of, and confirms the arrangement.

In consequence of the private business of the Society having engrossed nearly the entire time of the meetings for several months, a heavy accumulation of scientific arrears had resulted. It was therefore moved by Mr. Heatly, seconded by Mr. Laidlay, and carried unanimously,

That there be a supplementary meeting during this month, exclusively to dispose of arrears of scientific business: to be held on the 17th instant.

Proceedings of the Supplementary Meeting of the Asiatic Society of Bengal, SEPTEMBER, 1846.

Pursuant to a resolution passed at the monthly meeting of the Society, a Supplementary meeting for the disposal of the arrears of Scientific business, was held at the Society's Rooms, on Thursday evening, at half-past 8, P. M.

Lieut.-Colonel Forbes, Vice-President, in the Chair.

The minutes of Proceedings of the last meeting were read and reserved for confirmation at the next regular monthly meeting.

Read the following Report for September, 1846, by the Curator Museum Economic Geology.

REPORT OF THE CURATOR OF MUSEUM OF THE ECONOMIC GEOLOGY FOR SEPTEMBER.

Geology and Mineralogy.—I have obtained from the bazar some fragments of Encrinital or Pentacrinital fossils, which are sold there as medicines, and called the "branches of the Huzoor ul Loheid," which I have described and named provisionally "Loheidolite" in my report of October, 1844.

They are said to be from Loheida, also, so that it is possible this is a locality rich in fossils of the period to which these belong, though little dependance can be placed upon what is said of locality, as they may be brought to Loheida from a considerable distance.

Dr. Spilsbury has sent from Bundlecund a specimen of Copper-ore,* and one of a highly curious sandstone, of which last he says:—

"The other is a specimen of the sandstone used in building at Lullutpoor, (the Lurthpoor of Arrowsmith's map,) a station of Scindia's Contingent, some 20 miles east of Chunderee; it is remarkable for the ferruginous spherules imbedded in the stone, a good example of which is sent, as also the half of another to test its nature: the rock is quarried about 20 miles from the station."

* Will be noticed in the Economic Geological Report.

I have not sacrificed this very valuable little fragment to testing, which would only shew us probably that it is a highly ferruginous sandstone, and have only satisfied myself that it is not magnetic ; for it is of much higher interest than in a mere lithological point of view, inasmuch as, when examined by the magnifier or even by the naked eye, it shews exactly the structure of the Volcanic Bombs as described by Darwin and other writers, being highly compact at the external surface, where the iron also is in the state of a deutoxide, and of a loose concretionary texture at the centre, where (and also at the surface from the effects of exposure to the atmosphere), it is in the state of peroxide.

When we look at the specimen in the sandstone it is difficult not to suppose that it must have been imbedded there when the sandstone was soft! and we thus arrive at the conclusion that our little ferruginous bullets *may* have been *volcanic grape shot*, since their size does not entitle them to be called bombs. I have written to Dr. Spilsbury for more of these very curious specimens, when we shall be able to say more of them.

I have to announce also a further addition to our collection of Aerolites, being a second specimen obtained from the refuse of the Coal and Iron Committee's Collections, probably from Assam.

I at first thought that this was only another fragment of the former one announced in my report of June last, and indeed it very greatly resembles it in physical qualities, but upon chemical examination it has proved to be an entirely different specimen, and a remarkable one, as containing a considerable per-centage of Cobalt, of which the first is entirely destitute, and very little if any Nickel, of which it will be remembered the first has a notable proportion.

Museum of Economic Geology.—Dr. Spilsbury has also forwarded to us a specimen of Copper-ore from the Sahgurh territory, about 60 miles north of Sangor in Bundlecund, sent in by the Chief to the Deputy Commissioner, Captain Hamilton, and said to have been worked in former times, but it is so very poor an ore that it should rather be called a Gossan.* I was in hopes that the greenish black crust at the surface might contain Uranium, but it does not, being merely iron with a very little copper.

* The Cornish Miner's name for a ferruginous concretion more or less impregnated with copper, which indicates at the surface the existence of veins below.

Meteorological Note.—At the last meeting our Secretary handed to me a letter addressed to him by Dr. McGowan, inclosing one from Dr. Bellott of H. M. Ship *Wolf*, giving an account of a shower of ashes or dust at Shanghae, which enclosed a minute specimen of it. On examination it proved to be so highly curious that I have made it the subject of a report which may perhaps be worth insertion in the Journal, as illustrating meteorological questions of much importance.*

H. Piddington.

Mr Blyth, the Curator of the Museum of Zoology, exhibited the rare and valuable specimens of Birds, &c. received from Australia.

The following propositions were adopted by the Society:—

Proposed by G. A. Bushby, Esq., seconded by C. Huffnagle, Esq., and carried,

That the thanks of the Asiatic Society be offered to the several Societies, and individuals, from whom specimens have been presented this evening, through Mr. Blyth.

Proposed by G. A. Bushby, Esq., seconded by R. W. G. Frith, Esq. and resolved, that special thanks should be communicated through the Government of Bengal for the valuable gift from the State of New York to the Society's Library of the great work on the Natural History of New York, received at the last meeting.

Proposed by Mr. Heatly, seconded by Mr. Ward, and resolved, that in returning thanks for contributions to the Museum, Library, &c., the established copper-plate form be adhered to.

* This paper will appear in the Journal.

At a meeting of the Asiatic Society held on the 7th October, 1846,

Lt.-Col. Forbes, Vice-President, in the chair,

The Proceedings of the meeting of the 2nd September and of the supplementary meeting of the 17th September, were read and confirmed.

The following gentlemen having been duly ballotted for were unanimously elected members of the Society :—

G. R. WILBY, Esq.

W. KNIGHTON, Esq., Professor, Hindu College.

JAMES COLVILL, Esq., Advocate General.

JAMES DODD, Esq., Assay Master.

DR. YOUNG.

W. GREY, Esq., C. S.

C. J. Montague, Esq. of Serampore, was proposed for election as a member at the next meeting, by the Rev. J. Long and seconded by A. Mitchell, Esq.

The annexed list of works received since previous meeting was laid on the Table.

List of Books prepared for the Meeting of Wednesday, 7th October, 1846.

PRESENTED.

The Calcutta Christian Observer, for September and October, 1846.—By the Editors.

The Oriental Christian Spectator for September, 1846.—By the Editors.

The Journal of the Royal Geographical Society of London, Vol. XVI. Part I.—By the Society.

Self-Monition, an Armenian Poem, by Mr. George A. Zechariah of Java, through Mr. Avdall.—By the author.

* (Radices Linguæ Sanscritæ, N. L. Westergaard, 1841—12 copies.

Kalidasa's Ring—Çakuntala herausgegeben von Dr. Otto Boehtlingk, 1842—12 copies.

* German Books within the parentheses have been forwarded by the Society's agents in London without any advice but more likely for sale than presentation to this Society.

Zeitschrift für die Kunde des Morgenlandes. Von Christian Lasseu—1841, 42, 43, 44 and 1845.—14 copies.

Indische Alterthumskunde. Von Christian Lassen, 1843—6 copies.

Scriptorum Arabum De Rebus Indicis, Edidit Joannes Gildemeister—12 copies.

Malavika et Agnimitra, Edidit Dr. Otto Fred Tullbergh, 1840—3 copies P. P.

Radices Prâcriticæ, Edidit et illustravit Dr. Nicolaus Delius, 1839—12 copies P. P.

Kalidasæ Meghaduta et Çringaratilaka, J. Gildemeister, 1840—12 copies P. P.

Die Falsche Sanscrit Philologie des Herrn Dr. Haefer in Berlin, Von J. Gildemeister, 1840—12 pamphlets.)

Exchanged.

Edinburgh New Philosophical Journal, by Professor Jameson. April to July, 1846.

The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, No. 191, July, 1846.

The Athenæum, July 4th, 11th, 18th, 25th, and August 1st, 8th and 15th.

Purchased.

The Annals and Magazine of Natural History, No. 115, Vol. XVII. July, 1846. Supplementary number, and number 116.

Lardner's Cabinet Cyclopædia. History of Ireland—Vol. IV.

Histoire Naturelle des Poissons—Vol. XVIII.

Ditto .. Planches—Vol. XVIII.

Read a letter, No 2305, from Cecil Beadon, Esq. under-Secretary to the Government of Bengal, to the Vice-President and Secretary to the Asiatic Society :—

Sir,—The Hon'ble the Court of Directors having intimated their approval of the transfer to the Asiatic Society of the Books referred to in Mr. Secretary Prinsep's letter to the address of the Secretary to the Society, No. 265, dated the 24th February, 1836, I am directed to state that the monthly sum of 78 Rupees, allowed by Government for the custody of the Books in question is to cease from the end to the current month, agreeably to the conditions contained in Mr. Prinsep's letter.

I have the honor to be, &c.

C. Beadon.

Under-Secy. to the Govt. of Bengal.

Proposed by Dr. Hæberlin, seconded by Mr. Huffnagle and resolved,

That this letter be referred to the Committee of Papers for report.

Read the following letter from Mr. H. T. Prinsep, enclosing copy of a letter forwarded by the Russian minister in acknowledgment of receipts of the principal publications of the Asiatic Society.

To H. Torrens, *Esq. Secy. As. Soc.*

37, Hyde Park Gardens, *24th July*, 1846.

My dear Torrens,—I have just received from Baron Brunow, the Russian minister, the original, of which a copy is subjoined. His Excellency requests me to make the substance known to the Asiatic Society of Bengal, and to return the original, which compels me to make the copy.

Believe me,

Your's very sincerely,

H. T. Prinsep.

Monsieur le Baron,

Je viens de recevoir par l'entremise de la maison Allen & Co. à Londres, sur le bateau à vapeur Magnet, l'envoi contenant le second exemplaire des principales publications de la Société Asiatique de Bengale, qu'elle avait mises dans le temps à la disposition de Sa Majesté Impériale.

Ayant l'honneur de vous en instruire, je me fais un devoir de vous remercier des soins que vous avez prêtés à cette affaire. Veuillez bien, Monsieur le Baron, renouveller aussi l'expression de ma reconnaissance à la Société Asiatique de cette offre si intéressante et si utile à nos établissemens scientifiques.

Agréez en même temps, Monsieur le Baron, l'assurance de ma considération très distinguée.

(Signé) Ouvaroff.

(True Copy)

(Signed) H. T. Prinsep.

St. Petersbourg, ce 1 (13) *Juin*, 1846.

A son Excellence Monsieur le Baron de Brunow, &c. &c.

Read letters from the Secretary to the Marine Superintendent forwarding Registers of Meteorology of Tides, of Anemometer and Pluviometer, kept at Kyouk Phyoo, and notifying landing of two cases of books from the ship Elizabeth.

Read extracts from a letter from Monsieur Jules Mohl, dated Paris, 22nd July, 1846, and notifying that the sum of 2245 francs 65 cents remained at credit of the Society in his hands from sales of oriental publications.

Société Asiatique. Secretariat, Rue Taranne, No. 12, Paris, le 22 Juillet, 1846.

Dear Sir,—I have sent you on the 16th of March last year, the detailed account of the receipts and expenses for the sale of your Society's books here, but having received no answer, I suppose that my letter has not reached you. The result of the account was that I had in hand for your Society 1997 francs 65 cents. This sum has increased by last year's sale and amounts now to 2245 francs 65 cents, all expenses deducted, and I am waiting for your order to whom it shall be paid in London on your account.

If any of the Paris Society's books should have been sold in Calcutta, I beg you will let me know the amount that I may deduct it from the above sum due to you.

I have remarked that in the advertisements which you are so kind as to put in the Journal of your Society, the Aboulfeda is marked 8 rupees, but it ought to be 15 rupees.

I have asked you formerly to send parcels or boxes of books by French ships, but I find so much irregularity in the manner of delivering them, that I think the best will be in future to send all to London. It will cost us something in duty and commission, but at least we shall get the parcels sooner and by far more surely.

In consequence of the new arrangements which we have been obliged to make on the death of M. Cassin, our former agent, I find some difficulty in superintending the sale of the books of your Society. I think it would be to the advantage of the sale, if you would allow me to commission M. Duprat with it. M. Duprat is our Society's bookseller, since madam Pondy Dupin has retired from her business, and is a most honest man. I could audit his account every year, just as I did M. Cassin's. He would be obliged to increase the prices a little, but not much, and I am convinced your Society would gain by the change. Of course if your Society should wish that the actual arrangement should continue, we will go on as before, but my own opinion is that M. Duprat will sell more of your books than we do.

Could you buy for me two copies of *M. Elliot's supplement to the Glossary*, Agra, 1845? It is a most excellent book and I and M. Burnouf are very anxious to get it. I should be very happy too, if you could buy for me a copy of the Calcutta Agricultural Society's papers. I have often written to England to get them, but have never been able to buy them; there is most likely many a book published in India which we should be happy to get, but we learn their expense only by accident.

I am, Dear Sir,

Your's very truly,

Jules Mohl.

Resolved that this letter be referred to the Secretaries for special report, and that information be solicited from those officers as to the state of the Society's accounts with the several agencies entrusted with the sale of the Society's publications.

Proposed by G. A. Bushby, Esq., seconded by Dr. Hæberlin, and resolved,

That the Secretaries be requested to report on the stock of books belonging to other Societies or individuals intrusted to this Society for sale, also as to the state of preservation of the books.

Read a letter from Cecil Beadon, Esq., under-Secretary to the Government of Bengal, forwarding a map of Pooree, in 9 parts, for the museum of Economic Geology.

Read a letter from P. Melvill, Esq., under-Secretary to the Government of India, forwarding a Report by Captain Jacob, 2d Grenadier Regiment, Bombay N. I., on the Province of Kotewar, and extract from Report on the district Babriawar.

Read the following letter from the Librarian of the Calcutta Public Library :—

To H. Torrens, Esq., *Vice-President and Secretary, Asiatic Society.*

Sir,—The Curators of the Calcutta Public Library being desirous of increasing their Collection of Oriental works, direct me to say that they will feel much indebted for one copy of each of the following books. They trust the society will comply with this request, calculated as it is to promote the cause of Oriental literature.

Index to Mahabharata.

Khazánat ul ilm ul Riazi.

Anis ul Musharrahin.

Sharaya-ool Islam.

Burnouf's mémoire sur deux inscriptions cunéiformes.

Ditto, Commentaire sur le Yacna, with notes.

Elémens de la Grammaire Japanoise—Par Rodriguez et Remusct.

Do. Supplement.

Contes Arabes, traduits par J. J. Morcel.

Brosset, Elemens de la Langue Georgienne.

Klaproth Vocabulaire et Grammaire de la langue Georgienne.

Géographie d'Aboulfeda, Texte Arabe.

Points in the History of the Greek and Indo-Scythian Kings, &c. translated by Dr. Roer, and edited by H. Torrens, Esq.

I have the honor to be, Sir,

Your most obdt. Servant,

Peary Chand Mittra,

Librarian, Calcutta Public Library.

Metcalfe Hall, the 4th August, 1846.

Referred to the Secretaries for special report whether books be procurable, it being suggested by Mr. Piddington that the curators of the Public Library might on this occasion be requested to allow the officers of the Asiatic Society the free use of books from their Library for scientific or literary reference.

The Reports of the Finance Committee having been read and discussed; on the suggestion of Dr. W. B. O'Shaughnessy, C. Sec. it was proposed by Dr. Hæberlin, seconded by Mr. Ward, and resolved unanimously,

1. That the debts of the Society be paid at the earliest possible date by the sale of Company's Paper or other available means.

2. That the Funds assigned by Government to particular purposes, be in future strictly applied to those purposes alone.

3. That the items of distribution of general expenditure detailed in the Finance Committee's reports be referred to the Committee of Papers in association with the Finance Committee, for suggestions and further information.

It was arranged that a meeting of the Committees should take place at an early date for conference on the subject of the last resolution.

For all presentations the thanks of the Society were ordered to be returned.

Proceedings of a Meeting of the Asiatic Society of Bengal, held on the 4th NOVEMBER, 1846.

J. W. Laidlay, Esq. in the Chair.

The Proeeedings of the October meeting were read and eonfirmed.

C. J. Montague, Esq., of Scrampore, having been ballotted for, was duly eleeted a member.

Dr. Hough, Physician General, Bengal Medical Serviee, was named for ballot at next meeting. Proposed by Mr. Blyth, seconded by Dr. O'Shaughnessy.

Lieut. Latter, Bengal N. I., proposed by Capt. Marshall, seconded by Rev. Mr. Long.

Read the following announeement by the Committee of Papers of the resignation of Mr. Torrens, late Secretary to the Society :—

October 30, 1846.

SIR,—I have the honour to state that being under orders for employment out of Calcutta, it will soon cease to be in my power to continue in the duties of Honorary Secretary to the Asiatic Society of Bengal.

I have to request that you will tender my resignation of this honourable post to the Vice-President and Members here resident of the Society, and oblige me by notifying it to the Societies with whom we have been in correspondence.

I am, &c,

H. TORRENS,

V. P. Asiatic Society of Bengal.

With referenee to Mr. Torrens' letter, the Committee of Papers proposed the following resolutions for adoption by the Society :—

Resolved, that the Asiatic Society of Bengal on the occasion of their being deprived of Mr. Torrens' services as their Honorary Secretary, do hereby record their grateful sense of the distinguished zeal and ability with which, for several years he has conducted the duties of the office. As a testimonial of their respect, they further resolve to elect Mr. Torrens an Honorary Vice-President of the Society, and they solicit that in this

capacity, he will continue to afford them his highly valuable co-operation in the prosecution of the numerous objects of literary and antiquarian research which he has already pursued with such eminent success.

Resolved, that J. W. Laidlay, Esq., be elected a Co-Secretary of this Society.

Resolved, that the management of the Correspondence—general business of the Society—and immediate control of the office establishment be assigned to the Senior Secretary, in order to obviate the confusion which is apt to arise when the duties of one office devolve on two individuals.

Mr. Torrens was accordingly elected an Honorary Vice-President of the Society, and the 1st and 2d resolutions proposed by the Committee of Papers were unanimously carried; the 3d, relative to the arrangements for the secretariat duties being left to these officers to settle as they may think fit.

The following Report was submitted of the conference between the Committees of Papers and Finance, held on the 29th October, in accordance with the resolution of the Society passed at the October regular meeting.

Asiatic Society, 29th October, 1846.

Pursuant to the resolution of the last meeting, the Committees of Papers and Finance met at the Society's rooms at $8\frac{1}{2}$ P. M.

Present.

W. P. Grant, Esq., in the Chair; Lt.-Colonel Forbes, Messrs. Ward, Frith, Heatley, Dr. W. B. O'Shaughnessy, Secretary, Mr. Bolst, Accountant, in attendance.

The Second Report of the Finance Committee having been read, the Committees proceeded to examine the items of the proposed scale of expenditure in each Department.

ORIENTAL PUBLICATIONS.

The Committees of Papers and Finance recommend that Government be respectfully solicited to permit the Society to defray from the monthly allowance of 500 Rs. for Oriental Publications, 1st, the expense of the custody of the works now in store (for which a sum of 78 rupees

per mensem allowed by Government has lately been withdrawn), and 2d, the cost of the publication in the Society's Transactions and Journal of all papers on Oriental Literature, History, Antiquities, Geography and kindred subjects of research.

Museum of Zoology and Natural History.

Read Mr. Blyth's letter to the Finance Committee, dated 17th July, 1846, objecting to the scale proposed, namely, Co.'s Rs. 392 per mensem, as very inadequate, and not more than the amount of salary and house-rent promised by the Society to Mr. Blyth from July, 1844, payable on his completion of the MS. of the "Burnes" drawings.

The accounts handed in by Mr. Bolst showed, that Mr. Blyth and his establishment at present draw,

Mr. Blyth's Salary,	Rs.	250
Establishment		135
Contingencies,		105
	Total, Rs.	490
Of which Government allow Salary,		250
For specimens,		50
	Total, Rs.	300
Leaving 190 Rs. as the amount now paid from the Society's own funds, while Mr. Blyth claims an addition to his own salary,	Co.'s Rs.	100
House rent,		40
Additional Allowance for establishment,		50
	Co.'s Rs.	190

The Committees, on the testimony of Messrs. Torrens, Heatley and Frith, that the Society did duly and at a general meeting pledge themselves to the increased allowance claimed by Mr. Blyth, and with reference to that officer's zealous exertions and the very great augmentation and improved arrangement of their Zoological collections effected by his labours, unanimously recommend to the adoption of the Society the subjoined resolution :—

"That on the testimony of Messrs. Torrens, Frith and Heatley to the fact of Mr. Blyth's claim for an addition to his salary of 100 Rs. per mensem from July 1844, on his completion of the MS. of the "Burnes" drawings, being in conformity with a regular vote of the Society, the Society stands pledged to the obligation, and directs that the sum due be paid accordingly on the "Burnes" MS. being finished and delivered to the Secretaries; that it be notified to Mr. Blyth that the Society find with much regret the state of their funds compels them to return to his original salary of 250 Rs. with 40 Rs. for house-rent per mensem from the 1st of January, 1847, but that on their means permitting it they will have pleasure in increasing his salary and the allowance for his establishment to the total sum of 580 Rupees per mensem.

Museum of Economic Geology.

[The Report on this head still remains under consideration.]

Library and Secretary's Office.

The Committee of Finance have recommended 350 Rs. per mensem for the Secretary's office and Library, while the present expenses stand,

Library, including office establishment,.....	Rs.	414 0
Secretary and Accountant's office, ...		95 12
	Rs.	509 12

The Committees consider the subjoined arrangement deserving of adoption by the Society :—

Salary of Librarian,.....	Rs.	100
Accountant, ...		60
Purchase of Scientific Journals and Stationary, ...		100
Servants—Peons, Writer, Sircar,.....		90
	Rs.	350

The Committees recommend that *Baboo Rajender Mittro* be appointed *Librarian* and *Assistant Secretary*, on a salary of 100 Rs. per mensem. The appointment to be on trial for six months; that the Librarian be required to attend in the Library from 10 to 4 daily, Hindu Holidays included; and that in his capacity of *Assistant Secretary* he correct all proofs, and prepare all routine letters for the Secretary's office.

JOURNAL, RESEARCHES AND PRINTING.

The Committees recommend that the sum suggested by the Finance Committee. viz. Co.'s Rs. 475 per mensem, be adopted for this head of expenditure, and also that part of Mr. Torrens' stock of the back numbers of the *Journal* be reserved for the use of the Society to the value of Co.'s Rs. 1500.

CONTINGENCIES.

For this head the Finance Committee proposed the sum of Rs. 100 per mensem, the Committees now suggest that this item remain open to future consideration and arrangement.

A letter having been read from Mr. Torrens' to the Co-Secretary regarding the accounts and expenditure of the Society during his secretariat—

It was resolved unanimously and directed to be laid before the next general meeting for record.

That the Committees beg leave to repeat prominently the previous declaration of the Finance Committee, that the confusion in the accounts of the Journal arose entirely from an accidental omission and error on the part of the accountant, and further that they consider that every act of Mr. Torrens, in the management of the Society's pecuniary affairs has been done most openly and with their full cognizance and sanction.

W. P. GRANT, *Chairman.*

The above Report was fully adopted by the Society.

It was proposed by Dr. O'Shaughnessy, seconded by Mr. Laidlay, and carried, that Colonel Forbes, Captain Marshall and C. Huffnagle, Esq. be requested to act as *Auditors* of the Society's accounts for the remainder of the current year.

Captain Marshall and the Rev. Mr. Long having expressed their opinion that the Philological objects of the Society were not duly considered in the arrangements for the Secretariat.

It was proposed by Dr O'Shaughnessy, seconded by Mr. Laidlay, and carried unanimously, that Captain Marshall, the Rev. Mr. Long, the Rev. Dr. Hæberlin and Dr. Roër should be constituted the nucleus of an oriental sub-committee or section, for advice and reference to on all matters connected with oriental literature.

It was further proposed by the Rev. Mr. Long, seconded by Dr. O'Shaughnessy, and carried, that Dr. Roër be elected a Co-Secretary of the Society in the oriental literary department.

List of Books received at the Meeting of Wednesday, 4th November, 1846.

PRESENTED.

1.—Meteorological Register for September, 1846, kept at the Surveyor General's office.—BY THE SURVEYOR GENERAL..... 1
2.—The Calcutta Christian Observer for Nov. 1846.—BY THE EDITORS..... 1
3.—The Oriental Christian Spectator for October, 1846.—BY THE EDITOR.. 1
4.—The Registers of the Anemometer and Pluviometer and Tide Gauge kept at Kyouk Phyoo for September, 1846.—BY THE SUPERINTENDENT OF MARINE..... 1
5.—Transactions of the Leeds Philosophical and Literary Society, Vol. I. Part I.—BY THE SOCIETY..... 1
6.—Laws and Regulations of the Leeds Philosophical and Literary Society, pp. —BY THE SOCIETY..... 1
7.—Annual Report of the Leeds Philosophical and Literary Society for 1840, 41, 42, 43, 44, pp.—BY THE SOCIETY..... 4
8.—An Account of an Egyptian Mummy, pp.—BY THE LEEDS PHILOSOPHICAL AND LITERARY SOCIETY..... 1
9.—A Poetical Work, or Musnavie, in the Urdu language, by Maharaja Aparvu-Krishna Bahadur.—BY THE AUTHOR, ... 1

EXCHANGED.

10.—Journal Asiatique, Quatrieme Série, Tome VII. No. 34, Mai, 1846. .. 1
11.—Calcutta Journal of Natural History, July, 1846..... 1
12.—London, Edinburgh and Dublin Philosophical Magazine, No. 192. Aug. 1846..... 1
13.—Journal of the Agricultural and Horticultural Society of India, Part II. Vol. V..... 1
14.—The Quarterly Journal of the Geological Society, No. 7, August, 1846.. 1
15.—Annales de la Société Royale d'Agriculture, Histoire Naturelle de Lyon, Tome VII. 1845..... 1
16.—The Athenæum, Nos. 982 and 983, August 22d and 29th, 1846. 2

PURCHASED.

17.—Journal des Savans, Juin, 1846. 1
18.—Gould's Birds of Australia, No. XXIII. 1

The thanks of the Society were unanimously voted to the several learned Societies and individuals by whom the above contributions have been offered.

Oriental Literature.

Read letters from Major Troyer, Professor Lee, Dr. Von Martius, M. Jules Mohl, Mr. Ellis, Dr. Sprenger, the Maharaja Apurva Krishna, all which communications were referred to the Oriental Sub-Committee for report and information. The subjoined Report has accordingly been drawn up by the Sub-Committee.

November 7th, 1846.

Meeting of the Philological Section, present—the Rev. Mr. Long, Dr. Roer, and Captain Marshall.

1. Read a letter from Professor S. Lee; he suggests to the Society the publication of an Arabic Dictionary the "Sihah of Jowharri," with an appendix.

Resolved to refer the subject to Dr. Sprenger, and ask for information as to the expense of printing, size, &c. of the work, and anything else he may favor us with.

2. Read a letter from Maharaja Apurva-Krishna, presenting an Urdu Musnavie, written by himself.

Resolved, that the Raja be thanked for his present.

3. Read a letter from Dr. Sprenger, recommending the printing of a Persian History of Cashmere in original by Mahomed Azeem, at an expense (lithographed at Agra) of Rs. 400 (for 200 copies), and also an English Translation of the same by himself.

Resolved, to recommend the printing of the original, and to inquire of Dr. S. the expense of the same.

4. Read a letter from Moulavi Gholam Hyder, requesting patronage to four Arabic and Urdu books.

Resolved, that it be recommended that five copies of each be taken.

5. Read a letter from the Librarian of the Public Library, asking for certain oriental books.

Resolved, that a copy of each work published by the Society be presented, but many of the works belong to the Asiatic Society of Paris and are deposited for sale.

Received a communication from the Rev. Mr. Long, stating that a gentleman was about to print off Tabular Lists of some of the current words of the Aboriginal languages of India with a view to their being

distributed to intelligent individuals for the purpose of gaining additions to the stock.

Resolved, that the object is highly approved of and recommended for encouragement.

[Dr. Roer having left Calcutta for Moulmein immediately after the meeting of the Sub-Committee, the publication of the requisite extracts from letters referred to above is unavoidably suspended till Dr. Roer's return in December.—W. B. O'S.]

General Correspondence.

Read the following letters from Major Williams, descriptive of the recent volcanic eruption at Kyouk Phyoo.

Kyouk Phyoo, 26th October, 1846.

My dear Sir,—About quarter to 9 o'clock last night, we had an eruption of one of our Volcanoes near the village of Chein Kroong, about three or four miles from this station, on the island of Ramree—it burst out suddenly with a slight noise, emitting a brilliant flame, which instantly went out, and again burst forth; this happened for fifteen or twenty times, when the flame burnt steadily, gradually diminishing, and disappeared altogether about daybreak, or a little before it, this morning; it rained heavily all the time.

The whole sky was illuminated brilliantly, and again suddenly every thing was immersed in darkness during the flashes and their sudden disappearance, which I can only compare to the effect, on a small scale, of a handful of oil, or any combustible matter being thrown into a fire.

I have sent out ten coolies to collect stones, mud, &c. and hope to be able to send you some by the Steamer with this letter.

Your's sincerely,

D. Williams.

The flashes were exactly similar to those we saw out at sea two years ago, only that in this Volcanoe we saw the flame, there is therefore no doubt but that a Volcanoe burst out of the sea at the time I allude to, and which some attributed to a vessel on fire.

Oct. 28th. I send you specimens under the care of Ensign Anderson of the 25th.

Kyouk Phyoo, 28th October, 1846.

My dear Sir,—I have had a more correct description of the Volcanoe to-day—the size of the Crater is about six feet in diameter only; surrounded on all sides to some extent with soft mud knee-deep, and the jhow or Cassnarino trees growing around unhurt, in a regular manner as if planted there; no other kind of trees near, and of course all other vegetation covered with the mud thrown out. It is still burn-

ing, and it is just now a place of resort by these superstitious people who make offerings to the Naga, the cause of earthquakes and volcanoes. It appears that there is no hole where the flame (still burning and about two feet high) issues from, it comes up through the soft mud.

Your's sincerely,

D. Williams.

I now fill up a one dozen case full of the stones, mud, &c. collected from the volcanoe's mouth.

Read the following letter from Captain Durand, Commissioner Tenasserim Provinces, relative to his visit to the Salones tribe.

(Copy.)

No. 324.

From Captain H. M. Durand, *Commissioner Tenasserim Provinces.*

To F. J. Halliday, *Esq. Secretary to the Government of Bengal, Fort William.*

Dated H. Co.'s Steamer "Proserpine," the 11th April, 1846.

Sir,—I have the honor to report that when proceeding from Mergui to the Pak Chau, I gave permission to Mr. Brayton, of the American Baptist Mission, to embark on board the H. Co.'s Steamer "Proserpine," and on passing the Island of Lampee, he was landed in Marble Island Bay.

2. The object of this gentleman's visit to the island of Lampee was of a purely missionary character with reference to the Salones.

3. I took advantage of his visit to request that he would have the goodness to assemble as many of the Salones as could conveniently be brought together, in order that on the return of the Steamer I might have an opportunity of communicating with them.

4. On my return from the Pak Chau to Marble Island Bay, I found forty Salone boats assembled. Each boat was said to contain on an average ten individuals, men, women and children. The boats were excellent, and the appearance of the people neither so savage nor miserable as from their mode of life might have been anticipated. They were decently clad and seemed not at all deficient in intelligence.

5. The humane exertions of my predecessor to induce these people to enter upon a more civilized mode of life, and to attempt cultivation, and the formation of villages failed; but encouraged by the example of a Salone family from one of the islands to the southward of our territories, the Lampee Salones are now meditating the establishment of two small villages, one of six and another of five houses. The Salone who has set the example has cultivated between two and three acres. The family state that the islands to the southward of the British territories are frequented by Salones in greater number than those in the Mergui Archipelago, and that some of the Southern Salones have taken to cultivation and form permanent villages. The language is the same with that of the Salonese of the Mergui Archipelago.

6. Although the exertions of my predecessor failed in one respect, his liberality and the application of Mr. Brayton have succeeded in another and a very important particular. Mr. Brayton having acquired some knowledge of the Salone language, has taught several of them to read, and there is every probability of his Salone school being increased during the approaching rains. I forward three copies of the first Salone work, a small primer.

7. One of my objects in assembling the Lampee Salones was to ascertain whether they had during this dry season been visited by Malay Boats, their great dread. I was happy to learn that these timid unresisting people had during the dry season been free from molestation, and carried on their Sea Slug collections undisturbed and successfully.

8. Formerly the Salones paid a tax to Government of 3 rupees a boat, the tax was discontinued by my predecessor, and I have not imposed any new one upon them, nor do I intend it. Their Sea Slug collection is not unproductive, the slug selling at the rate of 30 to the rupee; but with the exception of a few mats, the making of which is the S. W. monsoon occupation, the slug forms their only wealth; it is caught or rather dug up, during the N. E. monsoon, at the period of low water in spring tides, and it is from the value of this article in the Mergui market that they obtain the means of purchasing rice, salt, and clothes. Their food is rice, fish, and shell fish; a few hogs are caught and killed by the aid of their numerous dogs, and some of the Lampee Salones had fowls with them. When as frequently occurs, the Salones have expended their rice, they have resort to a wild root which grows in abundance, and which after much maceration in water, parts with its poisonous matter, and becomes safe and edible.

9. I have no means of ascertaining or estimating the number of Salones in the Mergui Archipelago. Any guess must be a very random one. At Lampee, a favorite Salone place of resort, I suppose that instead of forty, with timely warning, nearly 100 boats might have been assembled, but it is their best frequented place of wandering. What the forests are to the Karens, the sea and the coasts of the islands of the Mergui Archipelago are to the Salones. The latter having boats, dispense with houses altogether, and are therefore still more migratory in their habits than the Karens. These are habits which it will require much time and favoring circumstances to break.

I have, &c.

(Signed) H. M. Durand,
Commissioner T. P.

(True Copy)

Cecil Beadon,
Under-Secy. to the Govt. of Bengal.

The Meteorological Registers kept at Kyouk Phyoo for September, 1846, were presented by the acting Superintendent of Marine.

Read a note from Captain Brodie to Major Jenkins, forwarding an Assam alphabet and numerals. (Referred to the Oriental Sub-Committee).

Mr. Piddington presented the annexed extract from Dr. Spilsbury's letter, forwarded with coins presented to the Society.

I send you some specimens of copper currency dug up at Irun Irun, (or Ariun of the maps,) famous for its lath, and an immense Burah, a drawing of which you will see in Asiatic Journal but I have not time to refer to the number.

Note.—Some of the supposed coins are evidently drops from small copper castings. Perhaps the castings of the very curious little relics themselves?

H. P.

A notice of the Nicobar islands was received from the Rev. L. Barbe and referred to the Committee of Papers.

(This valuable paper will be published in an early number of the Journal).

Read the following memorandum from Mr. Torrens, relative to the discovery of silver coins, and some remarkable specimens of pottery on Sagur island.

The accompanying specimens* of pottery are presented through Mr. R. J. Snell, C. S. They were brought from Sagor Island, having been found on what appeared the site of a deserted village not far from Sagor Point. The party who went on a pleasure excursion to explore the jungle and by whom these relics where discovered, met with a more than ordinary visitation from the effects of the pestilential tract into which they had ventured.

Having heard of coins having been found by some of the Lascars attached to the light establishment on Sagor Point,—information which he obtained from the Marine Superintendant's Office, to whom the coins (here exhibited) had been sent, —a European clerk, named Waller, employed as Accountant in the Calcutta Stamp Office, with the two friends, named Denham and Kay, went to explore the spot. They brought away the earthenware specimens which Mr. Waller intended for the Society's Museum, but before I could obtain particulars of this discovery from him, he was struck down, as also were his two companions simultaneously almost, with jungle fever, of which Denham and Waller died on the same day; the third person Mr. Kay, escaping death after a very severe struggle. While on their expedition

* Two images of the destroying power, in the shape of Kaloo Raee and Dukhin Raee. They are commonly revered about the Soonderbuns, and no wood-cutter, or hunter enters the jungle without *pooja* to them.

Two earthen lamp stands.

Various ordinary pots.

a native servant with them was carried off in the jungle by a tiger. These incidents give further evidence of the excessive danger attending the exploration of a naturally unhealthy tract at the most unhealthy season of the year.

The coins* silver and gold, together with a broken ring of base metal, were found in the jungle between the light-house stockade and the sea at Sagor point. Some of the lascars having been seen constantly at work in the jungle, were watched, and these coins found upon one of them, who sought to get away to Calcutta under circumstances which excited suspicion. The silver coins are all rupees, and generally in good preservation: all are of Musalman kings. The coin put apart in paper is a good specimen. Its legend is as noted marginally. A great number of them belong to one coinage bearing on the reverse (No. 2 legend). I have not had time to go through them all, nor identify their era. Some are in the hands of a native friend, and if returned to me I can easily classify or have classified the whole.

* *Silver*—76; 10 with a native friend for inspection—66 submitted. *Gold*—16, (one broken,) base metal, one broken ring.
1.—(*Obverse.*)—Ul Sooltan ul Azim Shumsh ood Dooniya wu ood Deen Ibn ul Muzuffer ul—ul Sooltan.
(*Reverse.*)—La Ullah ila ul Ullah, Muhummad Rusool Ullah ul Mustunzir bu Oomr ul—Umeer ul Momineen.
2.—Fee uhad ul Imam ul Mustunzir Umeer ul Momineen, or in some, Imam ul Musta'assim.

The gold coins are fanams, such as are, or were current in southern India. The base metal ring appears of the same composition with those fanams of zinc and silver, of which I found a large bagful in the museum without a trace of whence they came, or wherefore.

The character,† which is not Tamul, may lead to identify these coins, which when returned I will endeavour to do. The whole was most likely deposited on the shore of Sagor Island in the wreck of some native vessel.

Should the Society, or any members desire to possess any of these coins they can be taken rupee for rupee, and the gold at its value.

Nov. 4th, 1846. H. Torrens.

Report of the Curator of the Museum of Economic Geology for October.

Geology and Mineralogy.

We have received from Professor Zipser of Neusohl in Hungary, in continuation of his letter, which will be found in the Proceedings for August, 1845, a box containing the first hundred of the collections offered by him.

I have translated Dr. Zipser's letter and catalogue; the letter is as follows:—

Honourable Sirs,—I have received in due course the obliging letters of the illustrious Asiatic Society of Calcutta, and am happy to find that my proposal for the augmentation of the Museum was acceptable I have in consequence forwarded to Messrs. Waitjen and Co. at Bremen, a chest marked A. S. of B. No. 1.

† I have some reason to believe it to be the Musalman Chulia character.

It contains as a specimen, the first Century (hundred) of my Oryeto Geognostical Mineral Collections of Hungary. Without waiting for the acknowledgment of it by your Honourable Society. I shall forward forthwith the second hundred and proceed with the despatch of others as time and stock will allow me. I flatter myself in this wise to be of some small service to the Scientific Institution of Calcutta. If the Honourable Society will favor me with the works published by it relative to the Natural Sciences, that is to say "The Proceedings of the Asiatic Society,"* or with its works on Oriental Literature, I shall feel greatly obliged. I fear only the expenses of carriage. Those from Bremen I shall gladly undertake to pay. If my unpretending donation should come to the knowledge of the European-renowned Indian Baboo, Dwarkanath Tagore, and he should desire any of my collections for his son, who is studying in London, I shall be most ready to forward them to him. It will be of the highest possible gratification to me to have in this manner awakened in him a taste for Natural History.

The honourable Society's obedient servant, &c.

Dr. Zipser, *Professor.*

Neusohl in Hungary, 18th March, 1846.

P. S.—As a devoted Coin-collector I cannot conceal my wish to obtain some large Asiatic Silver Coins, and I take the liberty thankfully to beg to be allowed to offer repayment of their nominal worth.

1. The largest silver money used in Bengal in the 19th Century.

2. The same from Bombay, Madras, Island of Ceylon, (one rix dollar,) Sumatra and Java.

3. The large silver coins of the settlements in India, Danish, French, Dutch, Portuguese.

All these are wanting in my collection, therefore I shall be most thankful if at least I can obtain a part of them.

H. Piddington, *Esq. Asiatic Society of Bengal, Calcutta.*

Bremen, 14th April, 1846.

Sir,—We have in due time received your valued lines of September last, accompained by a letter of introduction of Messrs. Huschke, Wattenbach and Co., of your city, and with pleasure have offered to your correspondent, Professor Dr. Zipser, of Neusohl, in Hungary, our services for the purpose of forwarding any packages, he may have to send to you this way.

We have now received of him for your Society, (A. S. of B.) 1 box of minerals, which, in the absence of any direct opportunity for your port, we have shipped to London, as directed, to Messrs W. H. Allen and Co., Booksellers, there, requesting these gentlemen to forward the same by the first vessel, to your address.

For our expenses, viz.

* The Transactions are probably meant, but the Journal contains much more matter relative to the Natural Sciences.—H. P.

Freight and charges from Neusohl to Vienna, ...	f.	5	0
Freight from thence to Bremen, ...	f.	9	30
	f.	14	30
	or Rd.	9	59
Shipping charges here, ...	f.	0	63
Postage from Neusohl and Vienna to London,.....	f.	1	22
In all, Bremen Rix dollars, ...		12	0

We have drawn on Messrs. Hinck and Co., in Hamburg, who will recover this amount from you through their agents, Messrs. Huschke, Wattenbach and Co., of your city.

With a tender of our services in this place, we have the honor to be, &c.

D. H. Waitjen and Co.

I trust that the Society will meet this liberal donation, which has been obtained by Circulars of the Museum of Economic Geology, republished on the continent by my brother at Brussels, in a corresponding spirit. Our reply to him offered in exchange what might suit his views, whether scientific or literary. And he has pointed out what would be agreeable to him.

Economic Geology.

Captain Ouseley has sent us from Chota Nagpore for Mr. Williams of Llandilo, a good supply of the Agalmatolite mentioned in my report of October, 1844, and June 1845, as that gentleman is desirous of having trials made of it. As it looks promising, I have requested Messrs. Lyall, Matheson and Co. to forward specimens to China, to learn if it has any commercial value with the Chinese, whose taste in the stones of this class used by them for ornamental work is peculiar, and to us quite unknown. Corresponding specimens are kept in the museum marked—

No. 1. Large flat Slabs.

No. 2. More massive kind, but in thick layers,

and these may be always referred to.

At the August Meeting (I think) our Secretary handed to me a letter from the Secretary to Government of Bengal with a copy of a report from Dr. McClelland, respecting some Coal from Badam near Chota Nagpore, sent to Government by Lieut.-Colonel Ouseley.

As we had no specimen of this Coal I requested Colonel Ouseley to be good enough to furnish us with some, which he has, as usual, obligingly done; and specimens are on the table. Dr. McClelland has reported on this Coal, which indeed appears of a most promising quality, but its position, until we have a rail-road, is sadly against it.

A gentleman who does not wish his name to be known, has obliged us with three small but very pretty carved blocks of Chinese ornamental stone. The one is grey and is clearly an Agalmatolite; the second is probably the variety called Lardite by

some Mineralogists; and the third I should suppose to be a serpentine. These little specimens are too small and neat to spoil by chipping for further examination, but they serve to show the ornamental uses to which these minerals are so extensively applied in the east.

We received some time ago from Messrs. Fowle and Lonsdale of Moulmein a box containing upwards of thirty specimens of Ores from the Antimony Mines* near that place, with a request that they might be examined, their desire being of course to ascertain carefully and certainly if they contained any, and what, proportion of the precious metals. One of the Ores sent up was indeed a "supposed Antimonial silver."

Now, in complicated ores of this description, this sort of examination requires great care, time, and often repeated analysis, before a negative can safely be pronounced from a small specimen, to assure the miner or smelter who works on a large scale that nothing of value exists in his ores, and these references have thus occupied a very considerable portion of time and labour, and as is often the case in such investigations, have proved wholly unfruitful. Antimony, Iron, Arsenic and Sulphur with Bismuth, and in one instance a trace of Molybdena being all which can be discovered in them. The results have been sent to Messrs. Brightman, but are not worth detailing or printing.

I have suggested however to these gentlemen that they may find it well worth their while to sink a shaft "for a change of ores." As I now understand their operations they seem to be occupied with what one might call mere surface-digging rather than mining, and the pronouncing, as we must now do, that these ores contain nothing of value, is not to be understood as saying that the locality contains nothing, but merely that the ores *at the surface* have not been found valuable; which in Cornwall, and I think in Germany, is often thought to be a favourable indication.

We have received from Mr. Williams, the Hon'ble Company's Geologist, a collection of the Sandstone and Coal of the Burdwan district, collected by him in his survey, of which he has sent corresponding series for the Museum of the Hon'ble Company and for the National Museum of Economic Geology in London.

The proceedings of the evening were closed by a demonstration by the Curator of the Museum of Zoology, of numerous valuable additions to the Museum, acquired during the previous month.

Report of the Society's Zoological Curator for the Meeting held November 4th, 1846.

W. B. O'Shaugnessy, Esq., *Senior Secretary of the Asiatic Society.*

Sir,—Agreeably to your request, I resume the monthly publication of my reports of donations to the Zoological department of the Society's Museum, which the pressure of occupation and the impossibility of continuing regularly to treat the

* From an Estate belonging to Messrs. Brightman and Co.

subjects of my reports in such detail as was formerly my custom, and also my practice of embodying the substance of them in another form—as opportunities arose for treating on the different groups of animals they referred to, have conduced to occasion a very long suspension of their publication, which I trust will be in part remedied by that of a catalogue of the rich collection of Vertebrata now in the Museum. A brief summary notice of the objects presented to the Society during the past month, with the names of the several donors, is all that is now required of me, and as much as can be conveniently given on the present and similar occasions.

I have to acknowledge the receipt of a large case of specimens, despatched from London by Mr. Bartlett, and containing collections presented by several gentlemen to the Society, with the view both of assisting my researches, and some of them in return for specimens which I have formerly sent away on behalf of the Society. To Mr. W. Davison, proprietor of the Alnwick Museum, our thanks are especially due, for a very rich collection of British mammalia and birds, comprising various species that I greatly wanted, and some of considerable rarity. Among the mammalia are fine specimens of *Cervus elaphus* (imperfectly mature male), *C. dama* (remarkably fine), and *C. capreolus* (female); also an albino specimen of the common Seal *(Phoca vitulina)*, an Otter (*Lutra vulgaris*), &c. &c.; with 112 specimens of British birds, for the most part in excellent order.

Mr. Kirtland, of the Ashmolean Museum, Oxford, has also favored us with 50 species of British birds, comprising some that were very acceptable.

Mr. H. E. Strickland has presented a valuable labelled collection of mammalia, birds, reptiles, and shells, containing among the first *Rhinolophus hipposideros* and *Vesperlilio pipistrellus*, among the third a nearly complete series of British reptiles, and 123 species of British shells, in general showing the progress from youth to maturity, and comprising many specimens of the great majority of the species. The birds consist, for the most part, of generic types, and are therefore of especial value, more particularly as they comprehend various rare species that had long been desiderata with me, from continental Europe, North and South America, Africa, Australia, and even Northern Asia.

Mr. Bartlett, in packing the above collections, added several interesting species from his own stores, as particularly some fine examples of the smaller British mammalia, a skull of the European *Bos taurus*, &c.

Dr. Stewart, of H. M. 50th Regiment, has sent from Allahabad, various reptiles and fishes preserved in spirit, and living specimens of *Aquila falvescens*, *Poliornis teesa*, *Urrua bengalensis*, and *U. umbrata*.

Mr. E. O'Ryley, of Amherst, various reptiles, fishes, and insects, preserved in spirit.

Captain Wall, of the 'Tenasserim' S. V., a remarkably fine specimen of the 'Tokké Lizard of the Tenasserim Provinces (*Platydactylus Duvaucelii.*) The range of this species extends northward into Arracan and Assam.

Mr. Birch, of the Pilot Service, various reptiles, fishes, and *Crustacea*, from the vicinity of the Sandheads.

Mr. Halfhyde, of the Preventive Service, a very fine specimen, just dead, of *Palæornis erythrogenys* of the Nicobars, also a stuffed example of *Ostracion cornutus*, and some other specimens.

Lastly, I must beg to express my thanks to the Joint-Secretary of the Society, J. Laidlay, Esq., for the assistance he has rendered in setting up Mr. Strickland's shells; and the acknowledgments of the Society are due to him for a variety of species (especially tertiary shells from the later deposits of the Paris basin), with which he has enriched its collection: and I must also bring prominently to your notice Mr. E. Lindstedt's volunteered services in setting up several skeletons of birds, (including a fine Emeu,) which, with a large collection of other skeletons yet in store, had been long awaiting their turn to be mounted, with no immediate prospect of it from the incessant demands of other duties upon the time of my subordinates.

In conclusion, I must take this opportunity of mentioning at least the names of some of the most liberal of the many contributors to our Zoological collections, during the last three years. It may seem almost invidious not to enumerate a still longer list, but the Society has been very greatly indebted to the exertions of Captain Phayre, and of Captain Abbott, in Arracan; of the Rev. J. Barbe, in Tipperah, the Tenasserim Provinces, the Nicobar Islands, and Penang; also of Captain Lewis, in the Nicobars, and at Tranquebar; of E. O'Ryley, Esq. of Amherst; of the Rev. F. J. Lindstedt, Malacca; of F. Skipwith, Esq. in Sylhet, Tipperah, and Chittagong; of Major Jenkins, in Assam; C. S. Bonnevie, Esq. Rungpore; Dr. Stewart, now in Allahabad; G.T. Lushington, Esq. Almorah;—not to mention more particularly Mr. Jerdon, Lord Arthur Hay, and Mr. Frith; and we have received highly valuable collections from the Royal University of Christiania; of Malayan species from the Natural History Society of Batavia; and of Australian from the Sydney Museum. Further collections are moreover at this time expected, and partly from new contributors and fresh localities; and we have every reason to hope and expect, under existing encouragement, that the Zoological department of the Society's Museum will continue to thrive as it has done, and to excite increasing interest with all whose tastes lead them to study the diversified tribes of animals, which in this country are everywhere so abundant, and yet so little generally known, for the most part, even to professed students of systematic Natural History.

I have the honour to be, &c.

E. Blyth.

The usual monthly meeting was held on Wednesday evening, the 2d December.

The Hon'ble Sir J. P. Grant, in the chair.

The Senior Secretary read the proceedings of the last meeting.

Captain Marshall objected to the election of Mr. Torrens as a *permanent* Vice-President of the Society,—and the title of *Honorary* V. P. was accordingly substituted.

The proceedings were then confirmed.

Dr. Hough, Physician General, and *Lieut. Latter*, B. N. I. were ballotted for and duly elected members.

Dr. Duncan Stewart, was proposed by Dr. W. B. O'Shaughnessy, seconded by Mr. Laidlay.

Mr. Edgeworth, C. S. having returned from furlough, has notified his intention of rejoining the Society, and has been supplied with the back numbers of the Journal published during his absence.

The Senior Secretary produced the accounts of the past month, and stated that the debts of the Society, in conformity with the resolution of the monthly meeting of October, were all paid off, except the Bishop's College bills for printing, which would be discharged immediately; further, that funds were reserved to meet the liabilities arising from Mr. Blyth's claim, and the purchase of Journals from the late Secretary.

The Committee of Papers having deemed it necessary to make new arrangements regarding the Society's accounts, proposed the appointment of Mr. J. Muller,* on a salary of 60 Rs. a month.

Captain Marshall objected to the appointment, as the accounts would be kept at the Mint and rendered inaccessible to the members. He would prefer employing some native to act as Librarian and accountant, and keep the books, &c. at the Society's rooms.

* The principal accountant of the Mint.

The Senior Secretary explained that it was impossible for him to transact the business of the Society, and have its accounts and correspondence kept in order, unless the office establishment were situated where he had to pass the official day—Mr. Muller's great skill as an accountant was well known, and he would soon prove his usefulness to the Society. The accounts, the Secretary added, should be produced at each monthly meeting, and a copy laid on the Library-table during each ensuing month for general perusal.

Colonel Forbes, bore strong testimony to Mr. Muller's skill and to the necessity for adopting the arrangements proposed by the Committee of Papers.

The proposal having been seconded by Mr. Ward, was agreed to unanimously, Captain Marshall having withdrawn his objections.

By direction of the Committee of Papers it was communicated to the Society that a representation having been made by the Librarian of the property of the Society being in a most insecure state from 4 P. M. daily till 10 A. M. next day, valuable books, pictures, arms, &c. being left entirely open and only nominally in charge of the Durwans at the outer gate,—they had temporarily engaged as a night guard a European, (who brought certificates of good character,) at 40 Rs. and two native Chokedars obtained from Mr. McCann, Deputy Superintendent of Police, at 6 Rs. each. The Committee requested that this arrangement be confirmed by the General Meeting—as a *temporary* measure. (Approved accordingly.)

The Committee of Papers stated that they have requested sub-committees to visit and report on the state of the Library, and the museums, in the several departments.

The following list of Books was submitted by the Librarian.

Books received during the month of Nov. for the Meeting of 2d Dec. 1846.

PRESENTED.

1. Meteorological Register for October, 1846.—From the Surveyor General's Office.

2. The Oriental Christian Spectator, for November, 1846.—By the Editor.

3. Report on the Embankments of the Rivers of Bengal.—By the Government.

4. Report of the Mesmeric Committee appointed by the Government to observe and report upon Surgical Operations by Dr. Esdaile, two copies.—By the Government.

5. Proceedings of the Royal Society of Edinburgh, Nos. 27 and 28.—By the Society.

6. Tully's Offices —By Mr. Parker.

7. Norris's Miscellany.—By Mr. Parker.

8. Two Treatises on Government, being Essays on Political Economy.—By Mr. Parker.

9. Boyle's Incentives to the love of God.—By Mr. Parker.

10. Labour and Indian Immigration question at Mauritius.—By H. Torrens, Esq.

11. The Calcutta Journal of Natural History, 4 Nos.—By H. Torrens, Esq.

12. Christa Sangita, 2 copies. (Sanscrit).—By H. Torrens, Esq.

13. Macnaghten's Muhummadan Law.—By H. Torrens, Esq.

14. Hindu Intelligencer, Nos. 1 to 3.—By the Editor.

15. Bacon Paraphrased; or Annotations on Bacon's Essays.—By Babu Rajendralál Mittra.

16. Gelehrte Anzeigen, Vols. 6 to 21.—By the Royal Bavarian Academy.

17. Denkschriften;—Abhandlungen der Königlich Bayerischen Akademie der Wissenschaften, Vols. 10 to 21.—By the same.

18. Akademischer Almanach auf das Jahr 1843, 44 and 45, 3 pamphlets.—By the same.

19. Die Japhetiden und ihre gemeinsame Heimath Armenien, 1 pamphlet.—By the same.

20. Gedæchtnissrede auf Samuel Thomas von Sömmerring, von Dr. F. Dollingen, 1 pamphlet.—By the same.

21. Beleuchtung der Epikureischen Ethik, von Dr. Friedrich Arp, 1 pamphlet. —By the same.

22. Ueber das Studium der Griechischen und Römischen Alterthümer, von Ernst von Lasaulx, 1 pamphlet.—By the same.

23. Ueber die Vegetationsgruppen in Bayern, 1 pamphlet.—By the same.

24. Die Baukunst und ihre Bedeutung im Staate, 1 pamphlet.—By the same.

25. Ueber die Gorgonen Fabel, von Dr. Franz Streber, 1 pamphlet.—By the same.

26. Mannigfaltigkeit in der organischen und unorganischen Natur, von Franz von Kobell.—By the same.

27. Ueber die Nebelflecken, von Dr. J. Lamont, 1 pamphlet.—By the same.

28. Ueber Telegraphie, insbesondere durch galvanische Kräfte. Von Dr. C. A. Steinheil, 1 pamphlet.—By the same.

29. Mohammed's Religion. Von Joh. Jos. Ignaz Dollinger, 1 pamphlet.—By the same.

30. Ueber das magnetische Observatorium der Königl. Sternwarte bei München. Von Dr. J. Lamont. München, 1841, 1 pamphlet.—By the same

31. Betrachtungen über die Geschichte, von J. E. Ritter Von Roch-Sternfeld. München, 1841, 1 pamphlet.—By the same.

32. Rede zum Andenken an Ignaz Dollinger, Von Dr. Ph. Fr. v. Walther. München, 1841, 1 pamphlet.—By the same.

33. Geschichte der bayerischen Subsidien, vom Jahre 1740 bis 1762. Von Joseph von Stichauer, München, 1842, 1 pamphlet.—By the same.

34. Die Kartoffel Epidemie der letzten Jahre oder die Stockfäule und Räude der Kartoffeln, Von Dr. S. Fr. Ph. v. Martius. München, 1842, 1 pamphlet.—By the same.

35. Rede, gehalten zur 84sten Feyer des Stiftungstages der königlich bayerischen Akademie der Wissenschaften. München, 1843, 1 pamphlet.—By the same.

36. Deutsch und Welsch, oder der Weltkampf der Germanen und Romanen. Von Dr. Maassmann, München, 1843, 1 pamphlet.—By the same.

37. Rede zum Andenken an den hochwürdigsten Herrn Ignatz von Streber, von Dr. Franz Streber, München, 1843, 1 pamphlet.—By the same.

38 Die Geologie in ihrem Verhältnisse zu den übrigen Naturwissenschaften. Von Dr. Karl Schashautl. München, 1843, 1 pamphlet.—By the same.

39. Der Fortschritt der Sprachenkunde und ihre gegenwärtige Aufgabe, von Friedrich Windischmann. München, 1844, 1 pamphlet.—By the same.

40. Andeutungen zur Charakteristik des organischen Lebens, München, 1845, 1 pamphlet.—By the same.

Exchanged.

41. The Athenæum, for September 26th, 1846.

42. The London, Edinburgh, and Dublin Philosophical Magazine, No. 193.

43. Transactions of the Royal Society of Edinburgh, Vol. xvi. part. II.

Purchased.

44. The Annals and Magazine of Natural History, No. 118, September, 1846.

45. Journal des Savants, Juillet, 1846.

Read a note from Mr. Torrens, forwarding certain stray papers belonging to the Society.

Submitted M. S. from Mr. Blyth on the Zoology of the Nicobar Islands, and of Chusan, in elucidation of the Paper by the Rev. Mr. Barbe, and of Dr. Cantor's drawings.

Read a note from H. Brown, Esq. of Rangoon forwarding a box of fossil specimens from the Makkera Ming, brother to his Majesty the king of Burmah.

Read a note from Dr. Taylor, late Civil Surgeon of Dacca, forwarding revised copy of his remarks on the sequel to the Periplus of the Erythræan sea, first presented on the 6th of May.

Dr. O'Shaughnessy exhibited a specimen of *Schönbein's* gun cotton obtained from Mr. J. W. Grant, gave an account of its properties and

added some conjectures as to its preparation, which though kept secret by the inventor, Dr. O'Shaughnessy said he believed he could readily describe.—The specimen was too small for analysis, but on microscopic examination by Mr. Grant, proved not to be imbued with any crystalline matters. Dr. O'Shaughnessy added that he had several years since observed numerous facts, during the destruction of organic matters by strong Nitric acid in medico-legal analyses, which convince him now that Schoenbein's gun cotton is prepared by the action of Nitric acid on that substance—which is thus converted practically into *solid Carbonic acid*. He had since receiving the specimen from Mr. Grant made several experiments which were quite sufficient to shew that by the action of Nitric acid at a properly regulated strength and temperature, on cotton, flax, tow, paper and other organic matters, a powerfully explosive compound is easily obtained.

Dr. *Roer*, the Co-Secretary, Oriental Department, stated, that he had received from Dr. O'Shaughnessy a letter from Major Jenkins, forwarding impressions of the coins of the Ahom kings, and also a correspondence between Major Jenkins and Captain Brodie, respecting the characters and numerals of the Ahom language, and vocabularies of the Ahom and Khamti languages.—He was of opinion from the specimens he had seen, that the Ahom vocabulary did not refer to the ancient Ahom language, a branch of the Shan, which had ceased to be spoken, and was only understood by the priests, the preservers of the ancient religious traditions, but that it appeared to refer to the common Ahom or Assamese language, which is very similar to the Bengali. The Khamti language, he further observed, was a dialect of the Shan, the characters however, Burmese, and he proposed, that Capt. Latter should be requested to report on this vocabulary for reference to the Oriental Section, while the Ahom vocabulary and the Ahom coins should be immediately referred to that Section.

Ordered accordingly, and Captain Latter appointed a member of the Oriental Sub-committee.

The Rev. Mr. Long submitted a statement of the price of grain at Chinsurah, showing the average for the last fifty years.

A lengthened conversation ensued regarding the neglect of the investigation of the Ajunta caves and other topics of antiquarian research for which the Society long since appointed a Special Committee, and *Mr.*

Laidlay was requested to examine the records of the Society and report on this subject.

Mr. Blyth, Zoological Curator, read a list of books and periodicals he desired to have purchased for his department, and was requested to refer his wishes to the Committee of Papers in the regular course.

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